CMT-D11/T11

SERVICE MANUAL

US Model
Canadian Model
Tourist Model
CMT-T11
E Model
CMT-D11/T11

CMT-D11/T11 is composed of following models.
As for the service manual it is issued for each component model, then please refer to it.

COMPONENTS MODEL NAME FOR THIS SYSTEM

SET	CD PLAYER/ TUNER/AMP	CASSETTE DECK	ACTIVE SPEAKER SYSTEM
CMT-D11	HCD-D11	—	SA-N11
CMT-T11	HCD-T11	TC-TX1	

SPECIFICATIONS

General

Power requirements: US, Canadian model: 120 V AC, 60 Hz
Other model: 120 V or 220-240 V AC, adjustable, 50/60 Hz

Power consumption: CMT-T11: 25 W
CMT-D11: 20 W

Dimensions

CD/Tuner/Amplifier section:
Approx. 142 × 125 × 252 mm (w/h/d) (5 5/8 × 5 × 10 inches) incl. projecting parts and controls

Speaker system: Right: Approx. 125 × 205 × 212 mm (w/h/d) (5 × 8 1/8 × 8 3/8 inches) incl. projecting parts and controls
Left: Approx. 125 × 205 × 198 mm (w/h/d) (5 × 8 1/8 × 7 7/8 inches) incl. projecting parts and controls

Cassette deck: Approx. 142 × 125 × 205 mm (w/h/d) (5 5/8 × 5 × 8 1/8 inches) incl. projecting parts and controls

Mass

CD/Tuner/Amplifier Section:
Approx. 3 kg (6 lb 10 oz)

Speaker system: Right: Approx. 3.0 kg (6 lb 10 oz)
Left: Approx. 1.8 kg (3 lb 15 oz)

Cassette deck: Approx. 2 kg (4 lb 7 oz)

Supplied accessories

AM loop antenna (1)
Sony RM-ST1 Remote (1)
Sony SUM-3 (NS) batteries (2)
FM lead antenna (1)
Speaker cable (1)
Audio cord (1)

Design and specifications are subject to change without notice.

MICROFILM

COMPACT COMPONENT SYSTEM

SONY®

PARTS LIST

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  SP : Singapore JE: Tourist MY : Malaysia

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-271-11	COMMANDER, STANDARD (RM-ST1)	
	1-501-659-41	ANTENNA (FM)	
	1-501-721-11	ANTENNA (LOOP)	
	1-558-271-11	CORD, CONNECTION	
⚠	1-569-007-11	ADAPTOR CONVERSION 2P (JE)	
⚠	1-569-008-11	ADAPTOR CONVERSION 2P (CMT-D11: SP/MY)	
	1-775-761-11	CORD, SPEAKER	
	3-858-281-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (CMT-T11: Except US/Canadian)	
	3-858-281-22	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (CMT-T11: US /Canadian)	
	3-858-282-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (CMT-D11: SP/MY)	
*	4-911-408-01	LABEL, INDICATION, LEFT (SA-N11)	
*	4-941-762-41	COVER, BATTERY (For RM-ST1)	
*	4-970-587-21	PLATE (PIN JACK 2P), INDICATION (SA-N11)	
	4-975-903-01	PLATE (PIN JACK 6P), INDICATION (HCD-D11/T11)	
*	4-976-503-02	CUSHION (CM) (FRONT) (CMT-D11)	
*	4-976-504-01	CUSHION (CM) (REAR) (CMT-D11)	
*	4-976-507-01	CUSHION (TCD) (FRONT) (CMT-T11)	
*	4-976-508-01	CUSHION (TCD) (REAR) (CMT-T11)	
*	4-977-364-01	COVER (PIN JACK 2P) (HCD-D11/T11)	
*	4-984-507-01	CUSHION (QM) (SA-N11)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

English
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9-960-737-11

Sony Corporation
Home A&V Products Company

TC-TX1

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

TC-TX1 is cassette deck section in CMT-T1.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	TCM-190RB52C

SPECIFICATIONS

Recording system
4-track 2-channel stereo
Frequency response
(DOLBY NR OFF)
50 – 15,000 Hz (±3 dB), using Sony TYPE IV cassette
50 – 14,000 Hz (±3 dB), using Sony TYPE II cassette
50 – 13,000 Hz (±3 dB), using Sony TYPE I cassette
Wow and flutter
±0.2 % W.PEAK (DIN)
Dimensions
Approx. 142 x 125 x 205 mm (w/h/d) ($5^5/_8$ x 5 x $8^1/_8$ inches) incl. projecting parts and controls
Mass Approx. 2 kg (4 lb 7 oz)
Supplied accessory
Flat cord (1)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents

STEREO CASSETTE DECK

SONY®

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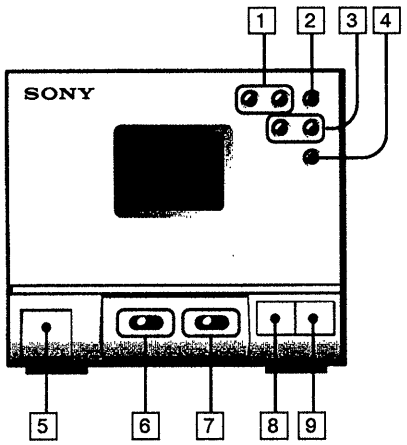
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

INDEX TO PARTS AND CONTROLS



1 ► (front side play) and ◄ (reverse side play) buttons
2 ■ (STOP) button
3 AMS/ ►► (fast rightward) and ◄◄ (fast leftward) buttons
4 ▮▮ (pause) button
5 ⏏ EJECT button
6 DOLBY NR OFF/ON switch
7 DIRECTION ⇄/↻ switch
8 ● REC button
9 CD SYNC button

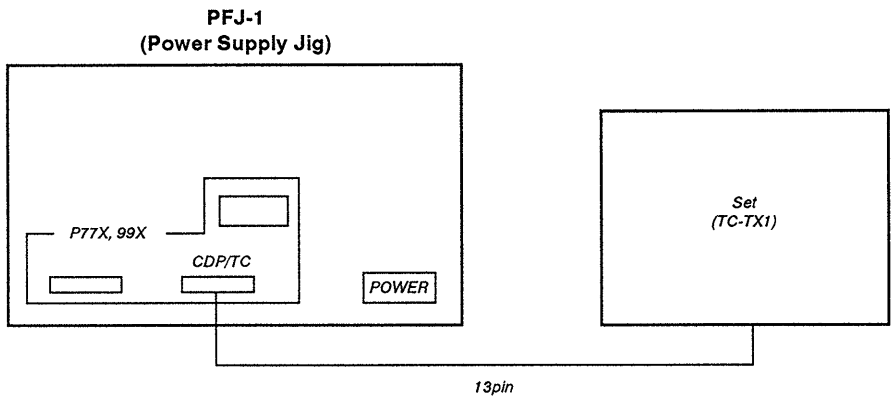
SERVICING NOTE

- **Power Supplied While servicing**

This unit does not have its own power supply. In this series, since power is supplied during operation from the HCD-T1 (CD/tuner/Pre Amp), you must connect the TC-TX1 to the HCD-T1 (CD/tuner/Per Amp) when carrying out service or repairs that require power be supplied. You can also supply power by attaching the "CDP/TC"connector from power supply jig (PFJ-1). (See the drawing below)

- **Power Supply Method using jig**

Connect the set and jig as shown in the diagram below and turn on the power switch.



- **Test Mode**

When using the (PFJ-1) power supply jig, always make sure to first set test mode prior to any servicing or repairs. (The set will not function unless you set it in test mode.)

Procedure :

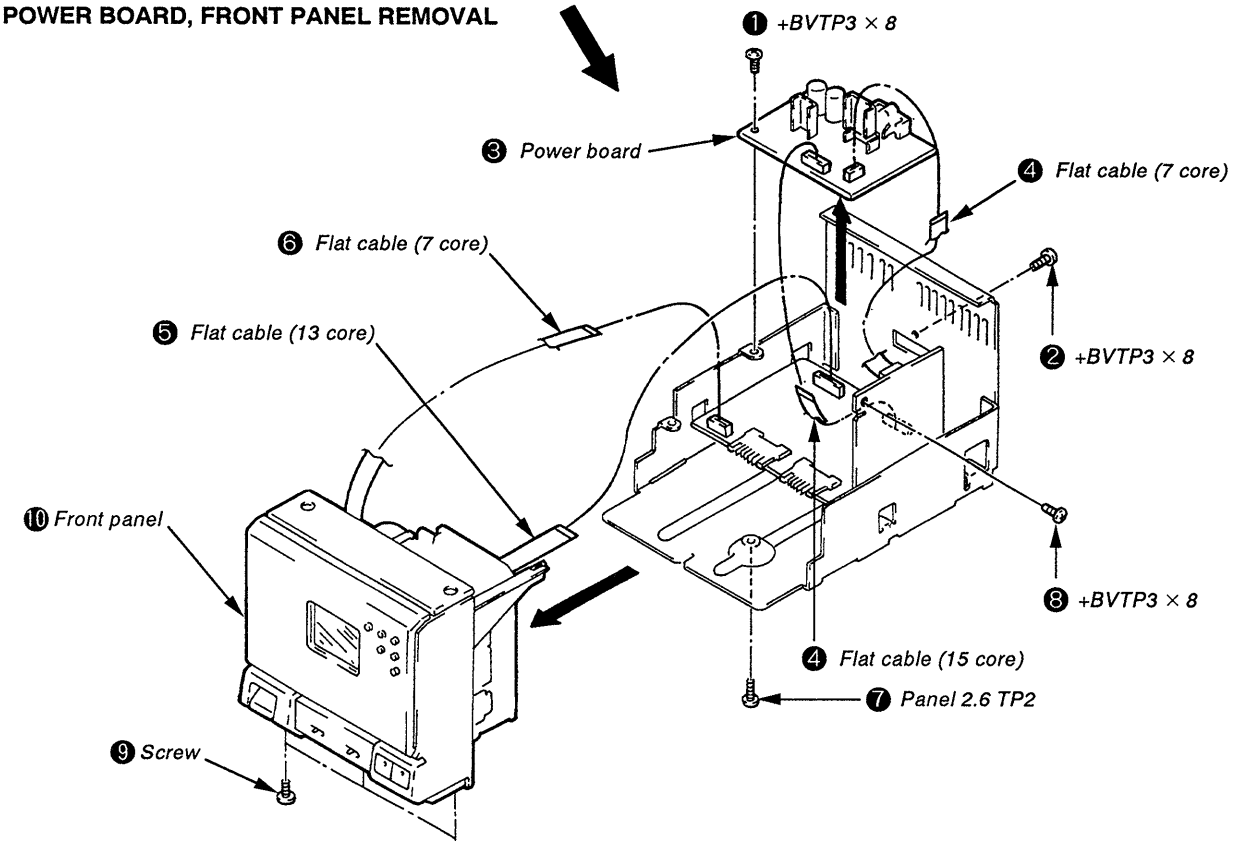
(1) Insert the CN-710 shorting plug and set the power switch to ON.
(2) To cancel test mode, set the power switch to OFF and extract the shorting plug.
(3) After servicing or repairs are complete, extract the shorting plug.

SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

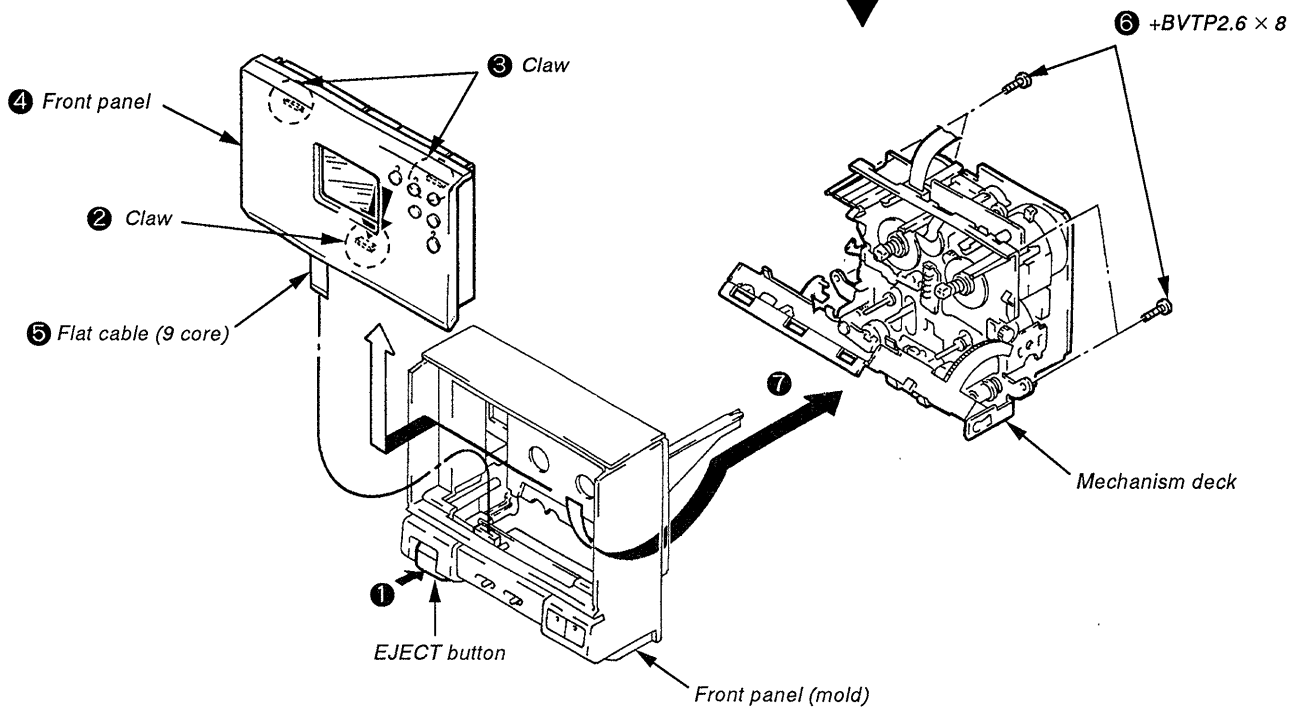
CASE
Unscrew the four case attachment in the screws (case) and remove the case.

2-1. POWER BOARD, FRONT PANEL REMOVAL

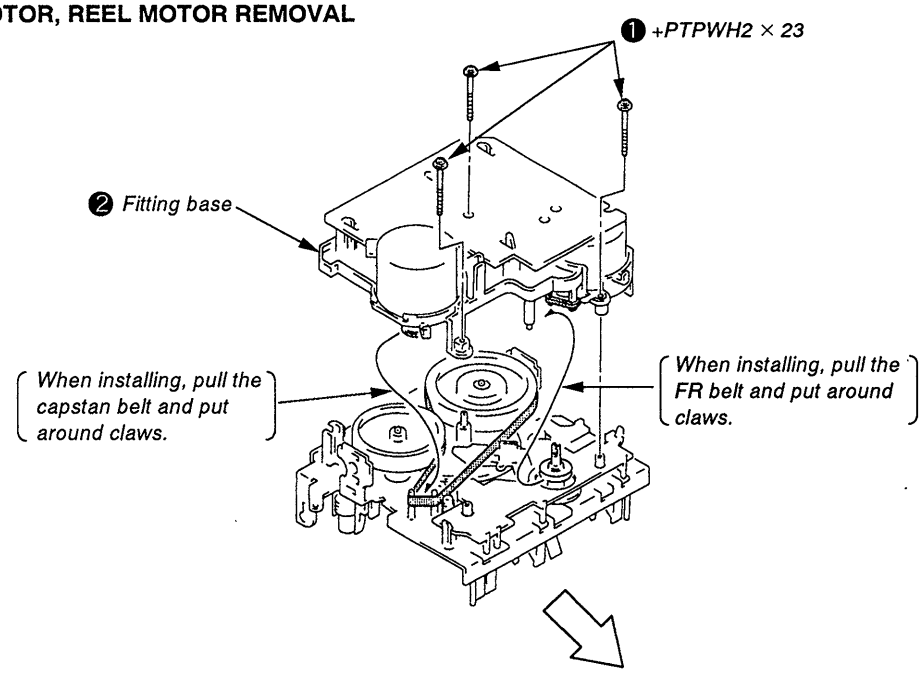

❶ +BVTP3 × 8
❸ Power board
❹ Flat cable (7 core)
❻ Flat cable (7 core)
❺ Flat cable (13 core)
❷ +BVTP3 × 8
❿ Front panel
❽ +BVTP3 × 8
❹ Flat cable (15 core)
❼ Panel 2.6 TP2
❾ Screw

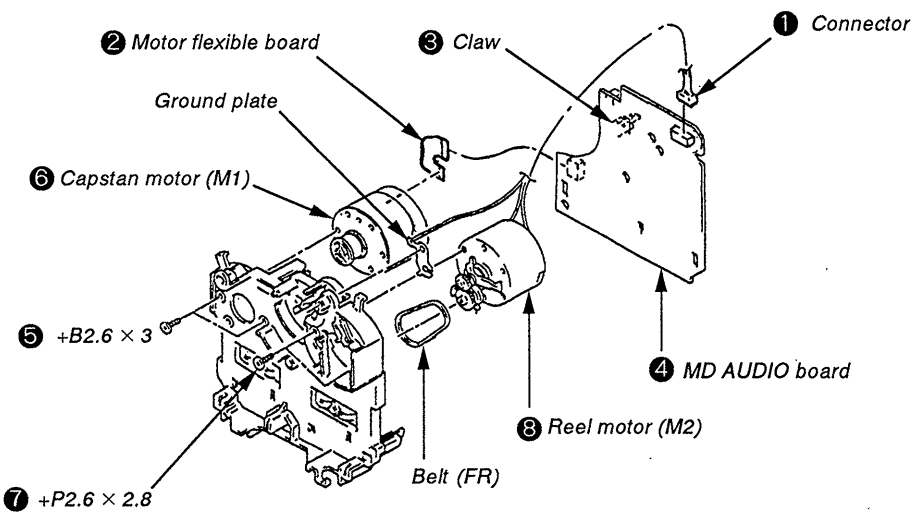
2-2. MECHANISM DECK REMOVAL

- Press the EJECT button.



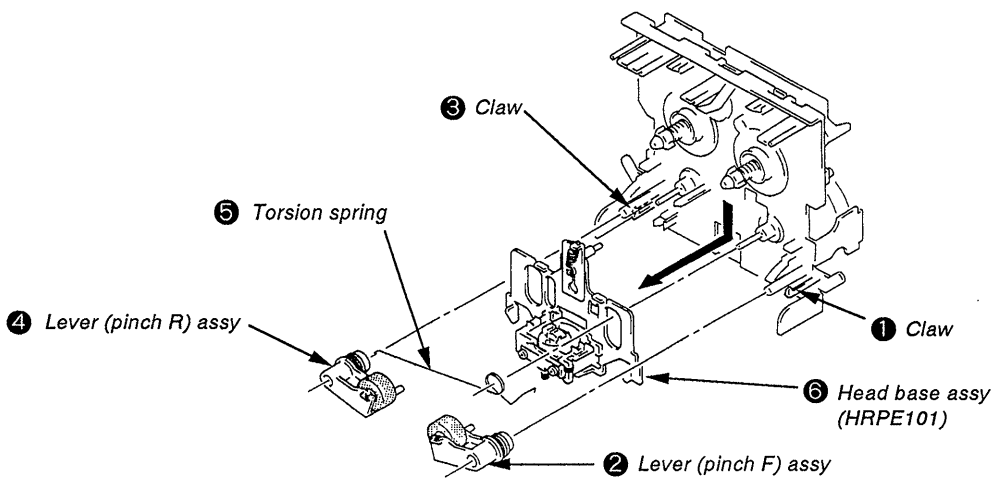
2-3. CAPSTAN MOTOR, REEL MOTOR REMOVAL


❶ +PTPWH2 × 23
❷ Fitting base
When installing, pull the capstan belt and put around claws.
When installing, pull the FR belt and put around claws.



Remove the cassette holder.

2-4. HEAD, PINCH ROLLER REMOVAL



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback/erase head　　pinch roller
   rubber belts　　capstan
   idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

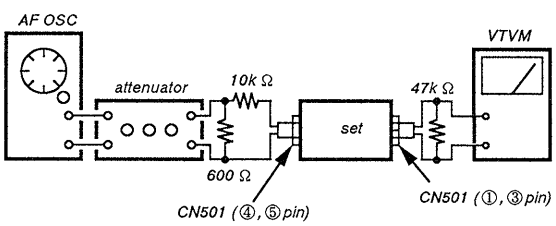
Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 60g • cm (0.42 to 0.83oz • inch)
Forward back tension	CQ-102C	1 to 5g • cm (0.014 to 0.069 oz • inch)
Reverse	CQ-102RC	30 to 60g • cm (0.42 to 0.83 oz • inch)
Reverse back tension	CQ-102RC	1 to 5g • cm (0.014 to 0.069 oz • inch)
FF/REW	CQ-201B	65 to 90g•cm (0.91 to 1.25 oz•inch)

3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication. (Be sure to male playback adjustment at first.)
2. The adjustments and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch　　: OFF
     DIRECTION MODE switch　　: ⇄

– Record Mode –



Test Tape

Tape	Contents	Use
P-4-A100	10kHz, – 10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

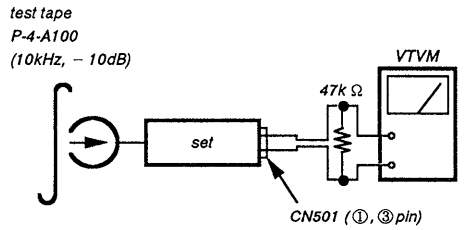
0dB=0.775V

Record/Playback Head Azimuth Adjustment

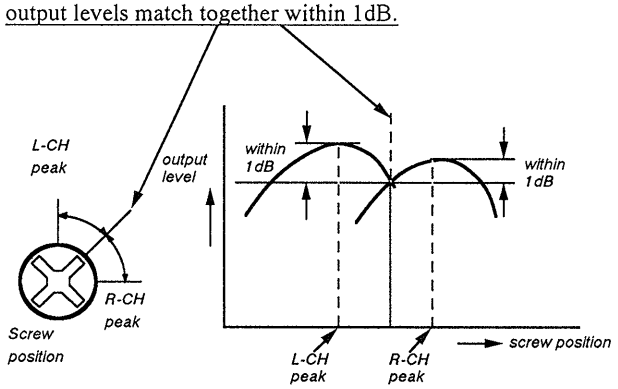
- Carry out servicing or repairs from the REVERSE direction first.

Procedure :

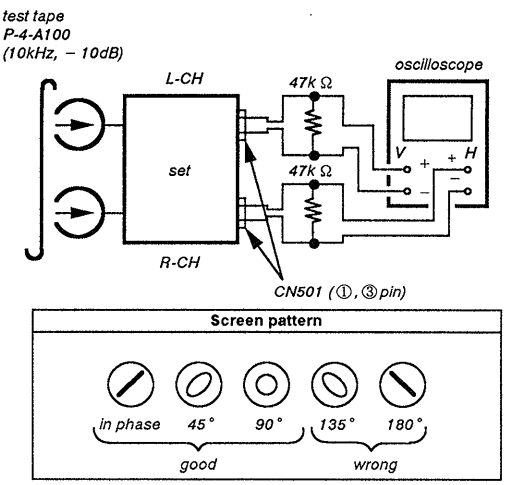
1. Reverse Playback Mode



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

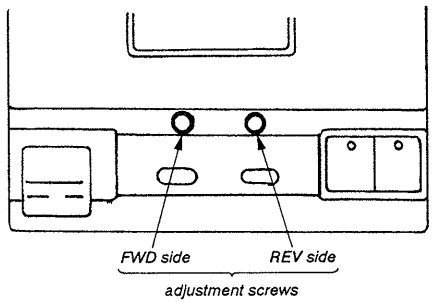


3. Playback Mode



4. Change the forward playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screws with suitable locking compound.

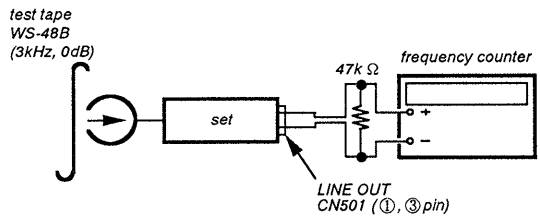
Adjustment Location : – record/playback head –



Tape Speed Adjustment

Procedure :

– Playback Mode –



1. Set to forward playback mode.
2. Adjust RV71 so that the frequency counter reeding becomes 3,000 ± 15Hz.

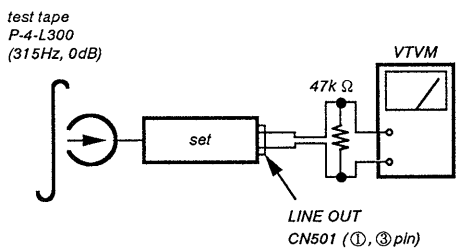
Frequency difference between the beginning and the end of the tape should be within 3%.

Adjustment Location : MD AUDIO board. (See page 8)

Playback Level Adjustment

Procedure :

– Playback Mode –



Adjust RV11(L-CH) and RV21(R-CH) so the VTVM reading becomes the adjustment limits below.

Adjustment Value : – 7.7 ± 0.5dB (0.301 to 0.338V)

Level difference between channels : within 0.3dB

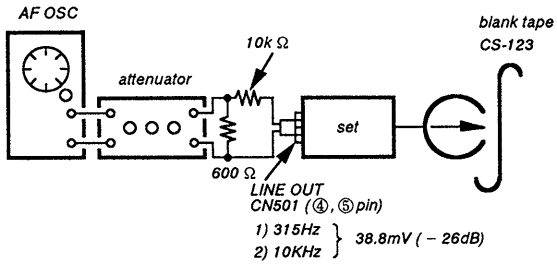
Confirm the playback level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD AUDIO board. (See page 8)

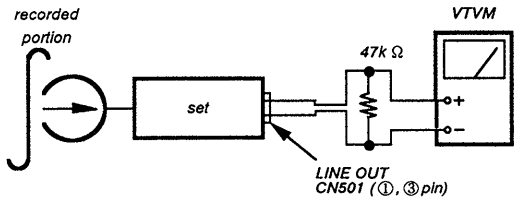
Record Bias Adjustment

Procedure :

1. Record Mode



2. Playback Mode



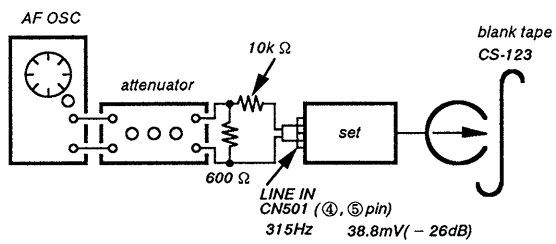
Confirm that the 10kHz playback output is 0 ± 0.5dB relative to the 315Hz output. If necessary, adjust RV12 (L-CH), RV22 (R-CH) and repeat the steps given above.

Adjustment Location : MD AUDIO board. (See page 8)

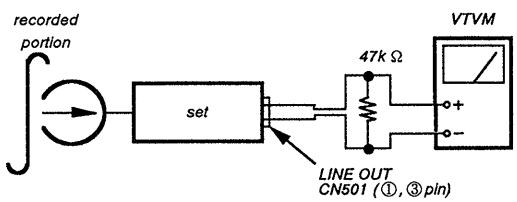
Record Level Adjustment

Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the steps 1 and 2.

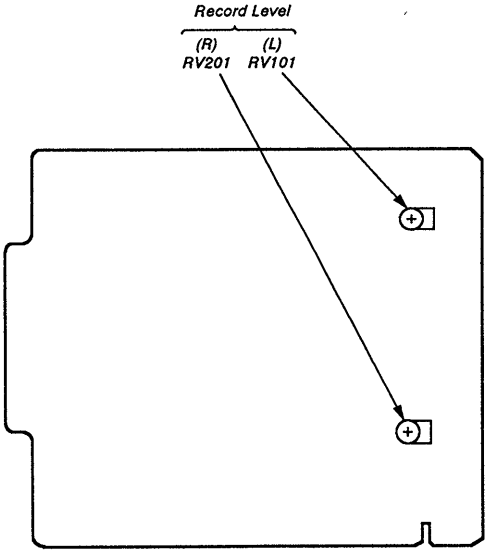
Adjustment Value :

TAPE-1 OUT level : – 26 ± 0.5dB (36.7 to 41.1mV)

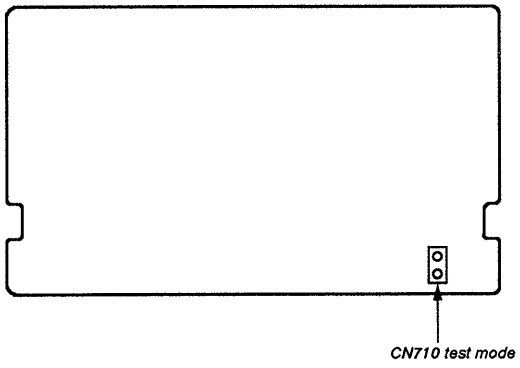
Adjustment Location : AUDIO board. (See page 8)

– Adjustment Parts Location Diagrams –

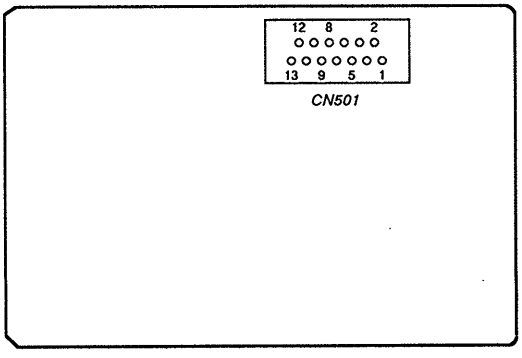
【AUDIO BOARD】 (Component side)



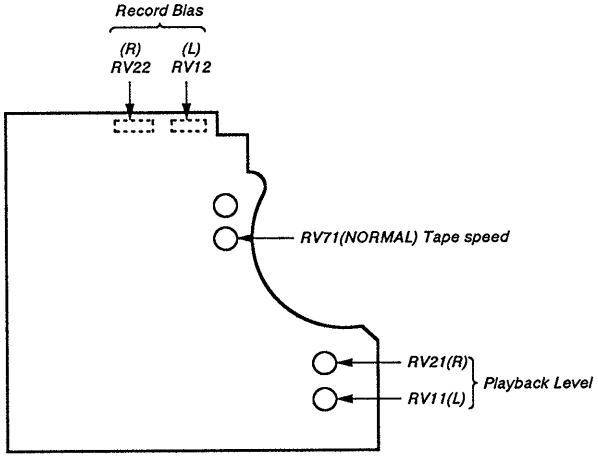
【SYSTEM CONTROL BOARD】 (Component side)



【POWER BOARD】 (Component side)



【MD AUDIO BOARD】 (Conductor side)



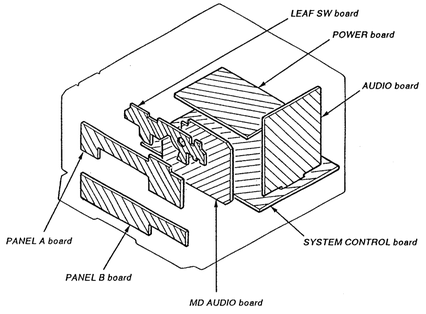
SECTION 4
EXPLANATION OF IC TERMINALS

IC702 TM87C846N-4220

Pin No.	Pin name	I/O	Description
1	LMUT	O	LINE mute ON/OFF control terminal.
2	AMUT	O	AUDIO mute ON/OFF control terminal.
3	REC/PB	O	REC/PB select terminal.
4	DOLBY	O	DOLBY NR ON/OFF control terminal.
5	RMUT	O	REC mute ON/OFF control terminal.
6	BIAS	O	REC BIAS ON/OFF control terminal.
7	RELAY	O	RELAY ON/OFF control terminal.
8	NC	–	Not used. (GND)
9	FWD	O	FWD LED drive.
10	REV	O	REV LED drive.
11	PAU	O	PAUSE LED drive.
12	REC	O	REC LED drive.
13	CDS	O	CD SYNC LED drive.
14	NC	–	Not used. (GND)
15	NC	–	Not used. (GND)
16	CAPM	O	Capstan motor drive output.
17	TEST	–	Test terminal. (GND)
18	RESET	I	Reset signal terminal.
19	XIN	I	System clock (4.0MHz)
20	XOUT	O	System clock (4.0MHz)
21	GND	–	Power supply. (GND)
22	VREF	–	VOLTAGE REFERANCE. (+5V)
23	KEY1	I	STOP/FWD/REV/KEY input terminal.
24	KEY2	I	PAUSE/FF/REW/KEY input terminal.
25	KEY3	I	REC/CD SYNC/DOLBY/DIRECTION KEY input terminal.
26	HALF	I	HALF SW detect input.。 "HALF" : +2.5V
27	SHUT	I	Reel table signal input terminal.
28	AMS IN	I	AMS signal input terminal.
29	RM –	O	Reel motor control output.
30	RM+	O	Reel motor control output.
31	STOP	I	STOP detect input. "H" : STOP
32	BIN	I	AU-BUS input terninal.
33	BOUT	O	AU-BUS output terminal.
34	NC	–	Not used. (GND)
35	NC	–	Not used. (GND)
36	NC	–	Not used. (GND)
37	TEST	I	Test mode terminal. "L" : TEST MODE
38	POWER	O	Control output to power IC (IC501).
39	NC	–	Not used. (GND)
40	NC	–	Not used. (GND)
41	NC	–	Not used. (GND)
42	+5V	–	Power supply. (GND)

SECTION 5
DIAGRAMS

• CIRCUIT BOARD LOCATION



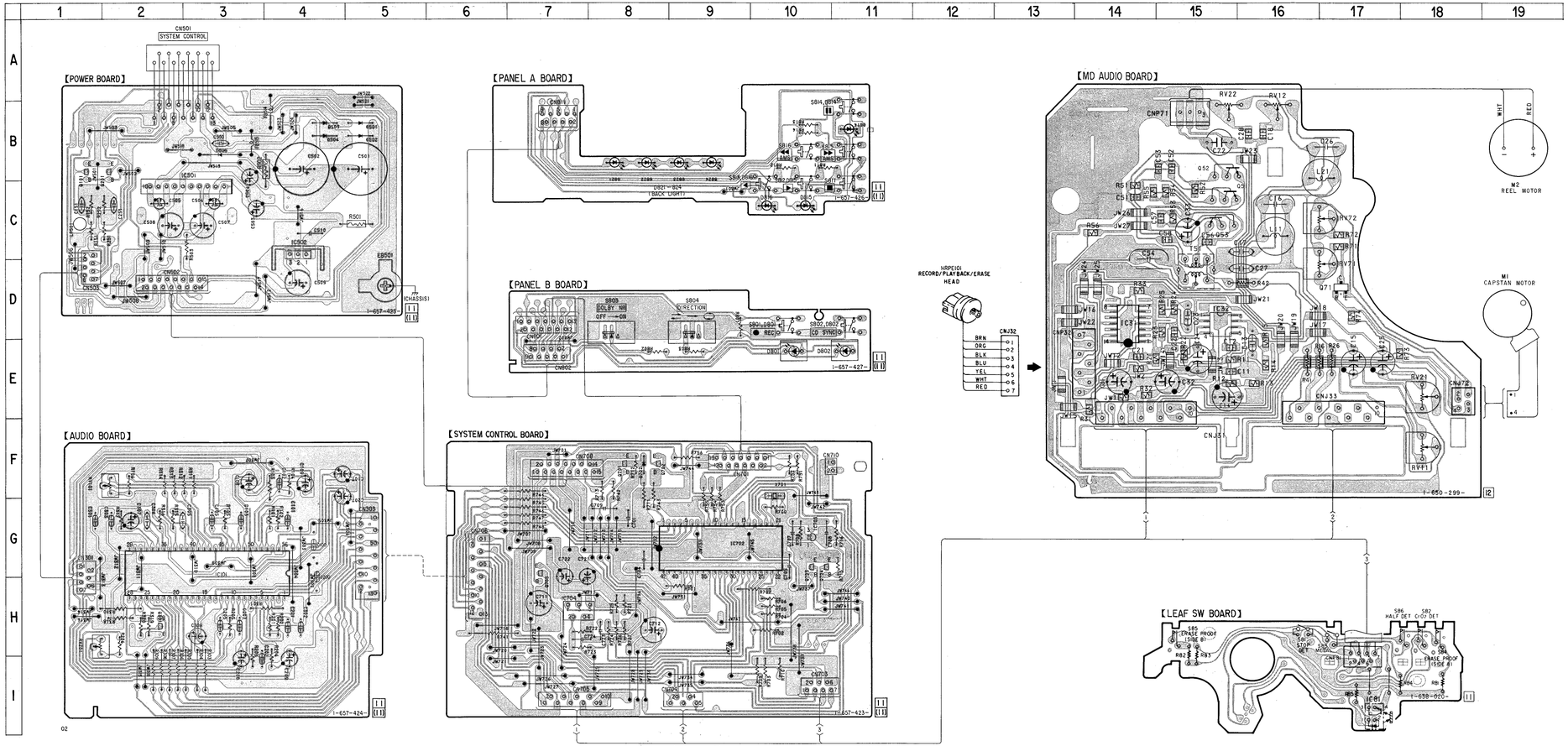
• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D501	B - 5	IC502	C - 4
D502	B - 5	IC702	G - 9
D503	B - 4	IC703	G - 10
D504	B - 4	IC704	H - 7
D506	B - 3		
D702	F - 8	Q51	B - 15
D801	E - 10	Q52	C - 15
D802	E - 11	Q53	C - 15
D814	B - 11	Q71	D - 17
D815	C - 10	Q101	B - 1
D816	C - 10	Q201	B - 2
D821	B - 8	Q301	H - 2
D822	B - 8	Q701	F - 8
D823	B - 9	Q702	F - 8
D824	B - 9	Q703	G - 10
		Q704	G - 10
IC31	D - 14	Q705	G - 7
IC32	D - 15		
IC81	I - 17		
IC101	H - 3		
IC501	C - 3		

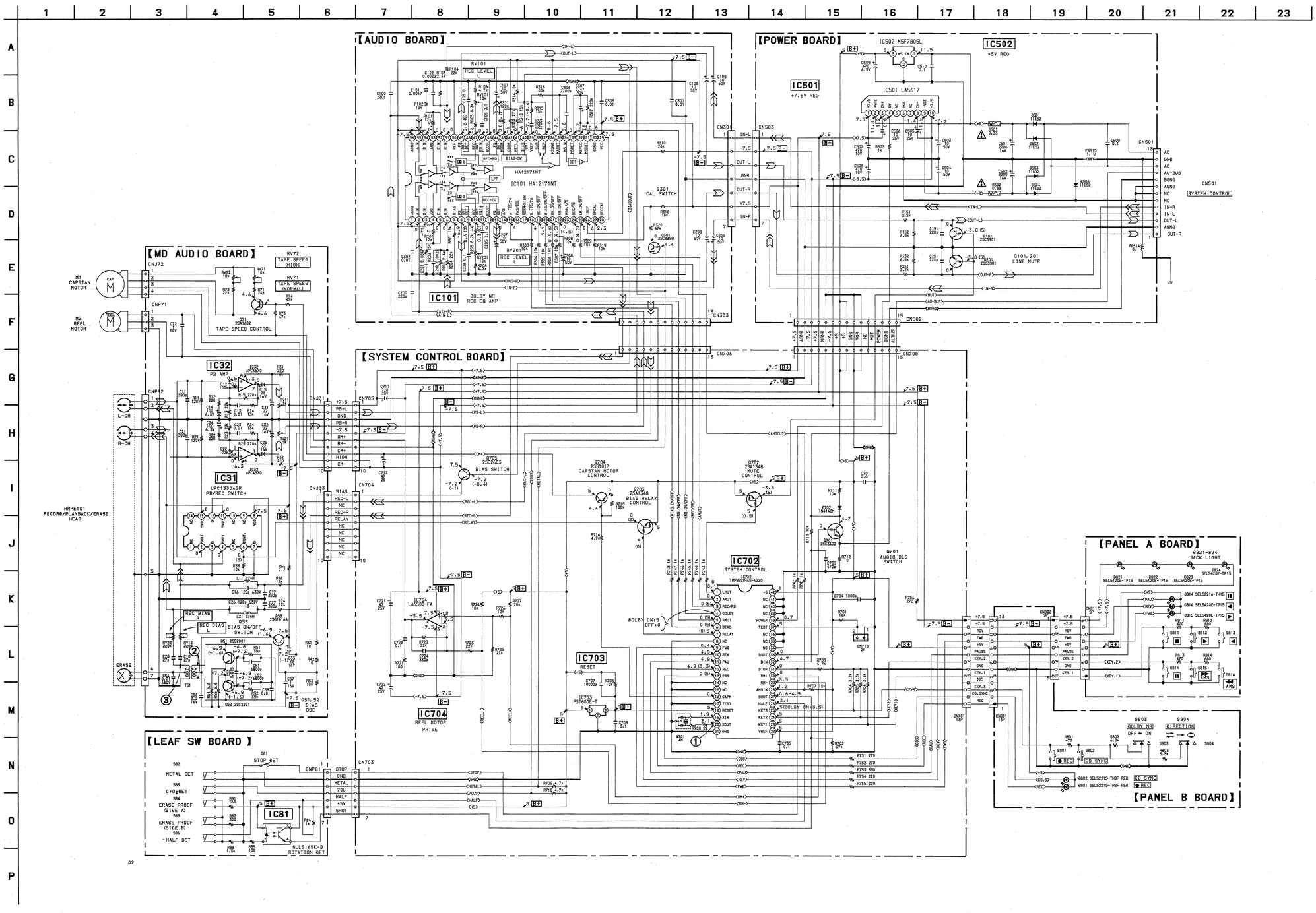
Note:

- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.

5-1. PRINTED WIRING BOARDS

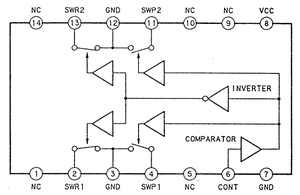


5-2. SCHEMATIC DIAGRAM

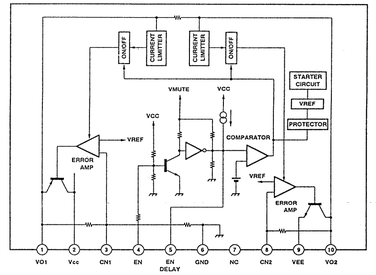


• IC BLOCK DIAGRAMS

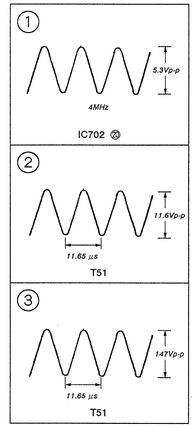
IC31 μPC1330AGR



IC501 LA5617



• WAVEFORMS



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ⁄W⁄ : fusible resistor.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

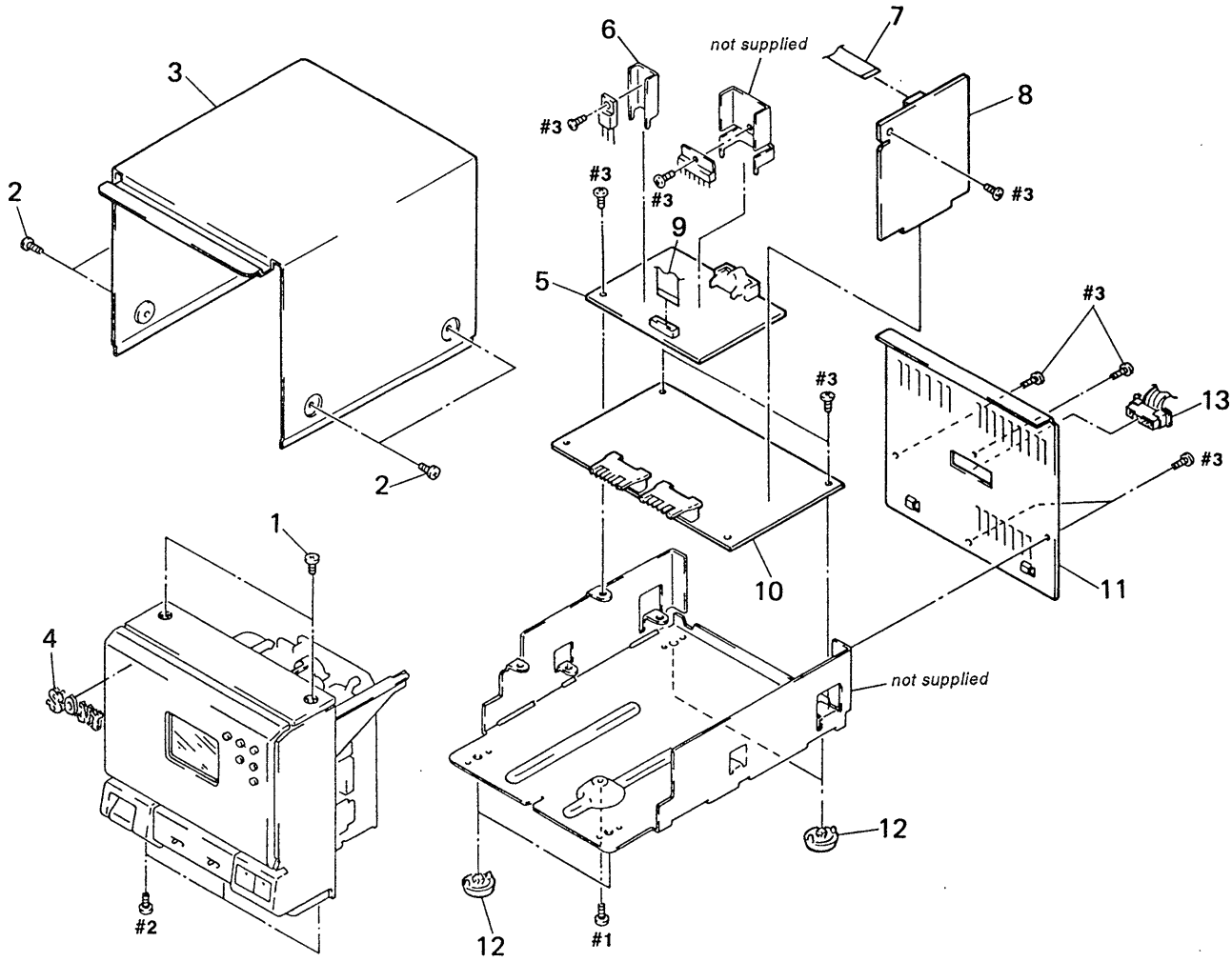
- B+ : B+ Line
- B− : B − Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▷ : PB
  ▷▷ : REC

SECTION 6
EXPLODED VIEWS

NOTE :

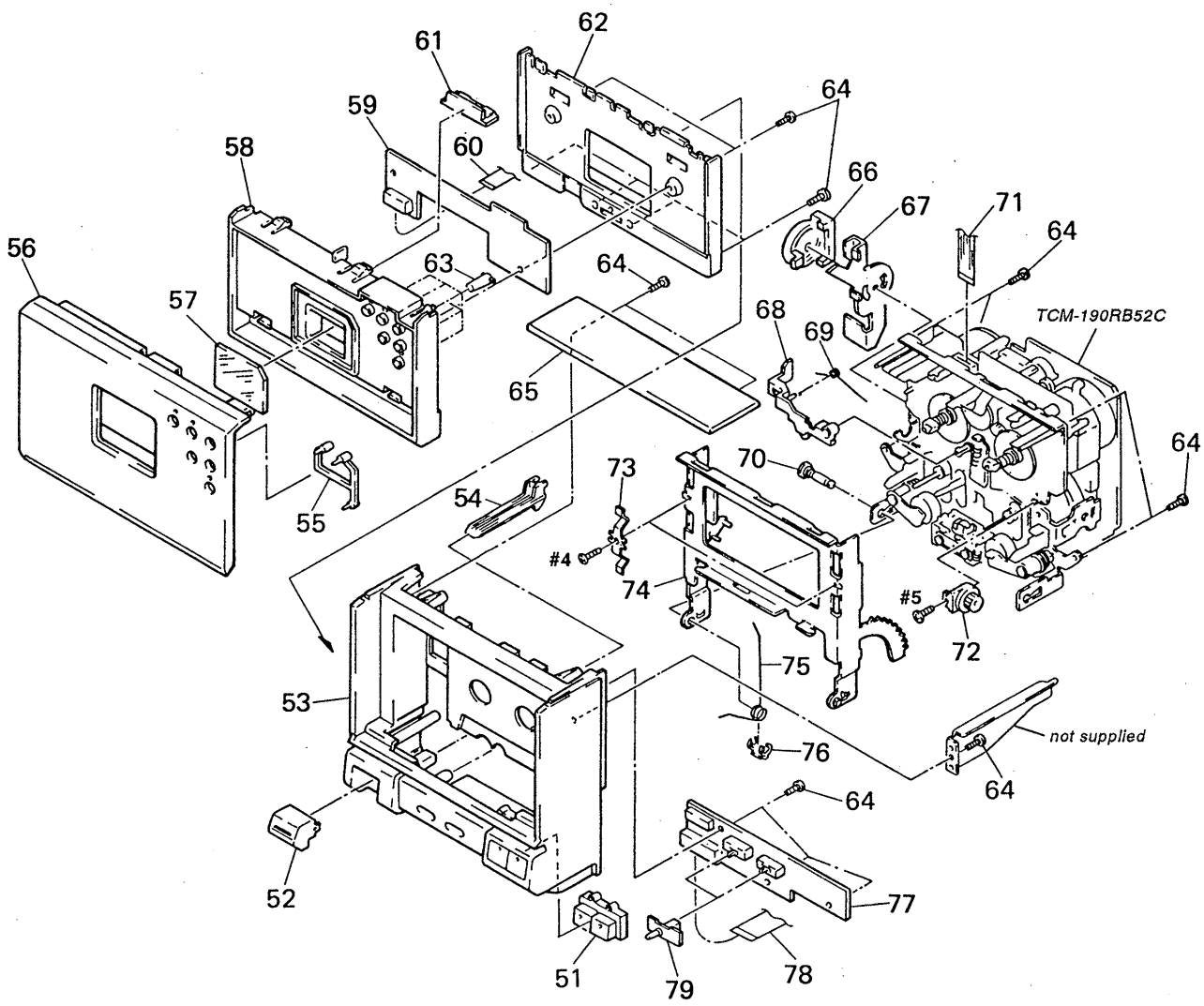
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

6-1. CHASSIS SECTION



Ref.No.	Part No.	Description	Remark
1	4-975-365-01	SCREW (ALUMINUM)	
2	3-704-366-61	SCREW (CASE)	
3	4-975-358-11	CASE	
4	4-942-636-21	EMBLEM (NO. 3. 5), SONY	
* 5	A-2007-467-A	POWER BOARD, COMPLETE	
* 6	3-309-144-21	HEAT SINK	
7	1-769-882-11	WIRE (FLAT TYPE) (7 CORE)	
* 8	A-2007-437-A	AUDIO BOARD, COMPLETE	
9	1-773-008-11	WIRE (FLAT TYPE) (15 CORE)	
* 10	A-2007-466-A	SYSTEM CONTROL BOARD, COMPLETE	
11	3-925-586-12	PANEL, BACK	
12	4-965-822-31	FOOT	
13	1-775-734-11	CORD, CONNECTION 13P	

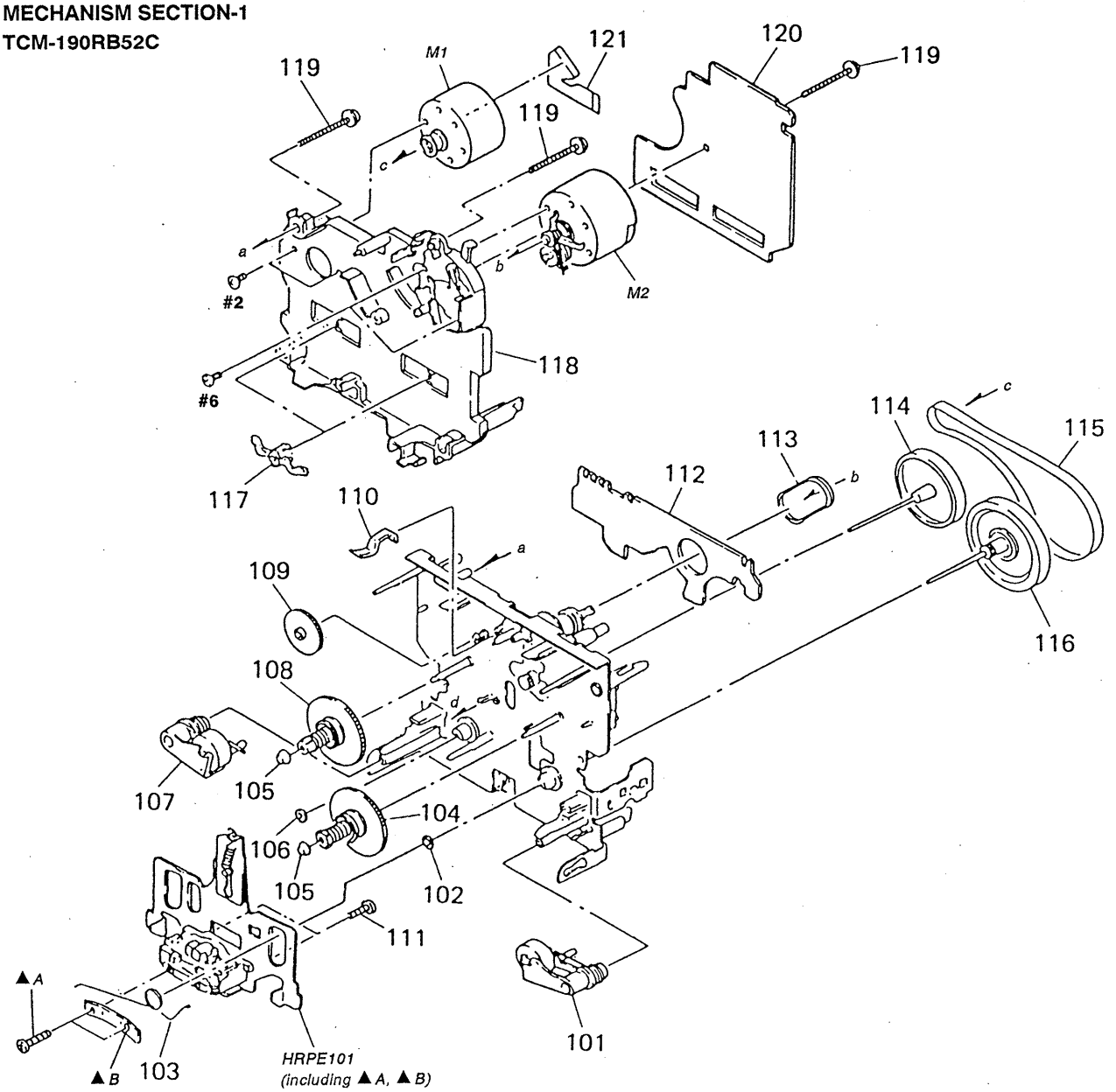
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-3370-555-1	BUTTON (REC) ASSY	
52	3-925-580-01	BUTTON (EJECT)	
53	3-925-575-01	PANEL (MOLD), FRONT	
* 54	3-925-916-01	SLIDER (EJECT)	
55	3-925-662-01	INDICATOR (PLAY)	
56	3-925-574-01	PANEL (AL), FRONT	
57	4-975-345-11	PLATE (WINDOW), INDICATION	
58	3-925-577-01	LID, CASSETTE	
* 59	1-657-426-11	PANEL A BOARD	
60	1-775-429-11	WIRE (FLAT TYPE) (9 CORE)	
61	3-925-584-01	INDICATOR (WINDOW)	
* 62	3-925-578-01	LID, CASSETTE (REAR)	
63	3-925-581-01	BUTTON (PLAY)	
64	4-951-620-01	SCREW (2.6×8), +BVTP	
65	3-925-576-01	PANEL, TOP	

Ref. No.	Part No.	Description	Remark
66	3-354-957-01	JOINT (LOCK LEVER)	
* 67	3-354-953-01	LEVER (LOCK LEVER L)	
68	3-926-195-01	LEVER (EJ-L)	
69	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
70	3-367-721-01	SHAFT (FULCRUM SHAFT)	
71	1-769-882-11	WIRE (FLAT TYPE) (7 CORE)	
72	3-354-963-21	DAMPER	
73	3-340-137-01	SPRING, CASSETTE RETAINER	
74	X-3362-857-1	HOLDER (L) ASSY, CASSETTE	
75	3-354-959-01	SPRING (LOADING L), TORSION	
76	3-367-720-01	RING (W), RETAINING	
* 77	1-657-427-11	PANEL B BOARD	
78	1-775-428-11	WIRE (FLAT TYPE) (13 CORE)	
79	3-925-582-01	KNOB (SLIDE)	

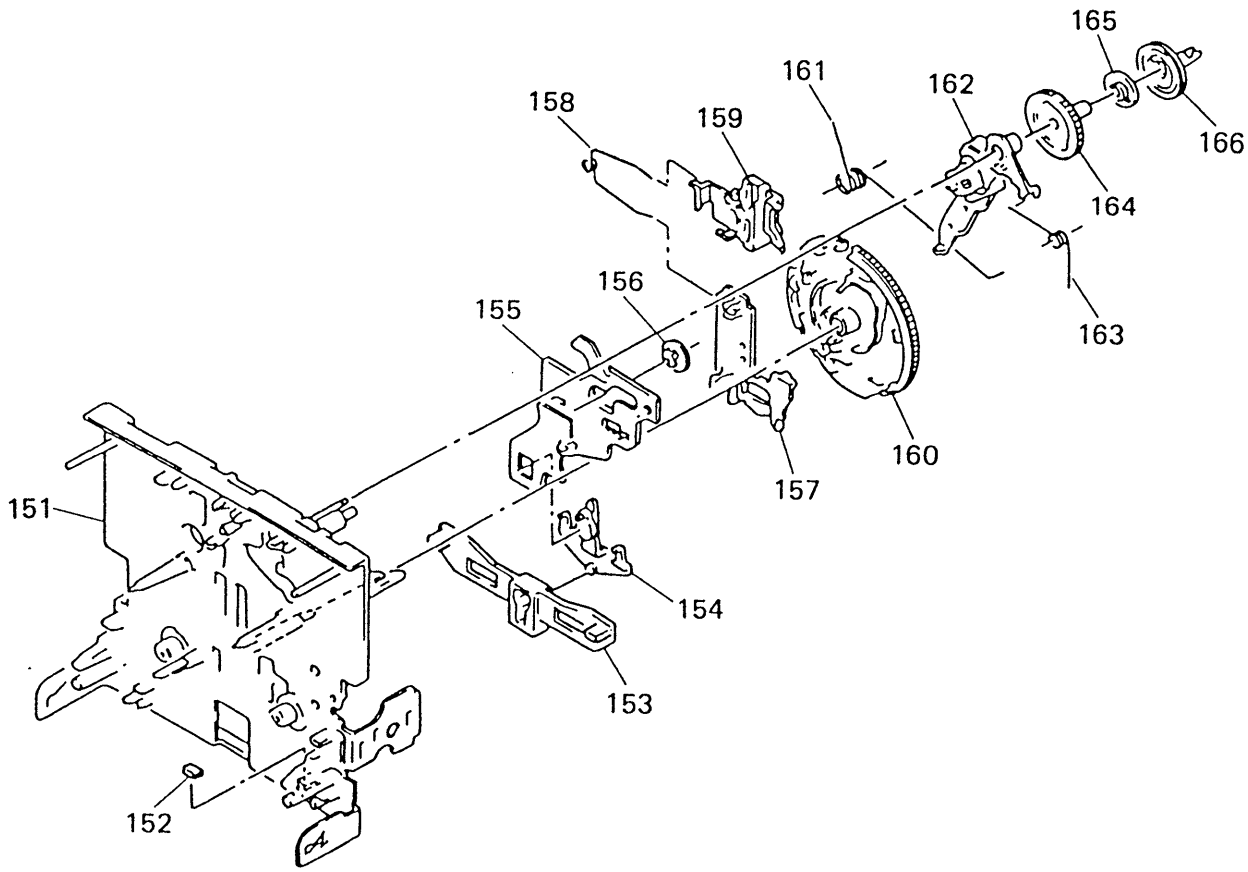
6-3. MECHANISM SECTION-1
TCM-190RB52C



Ref. No.	Part No.	Description	Remark
101	X-3366-047-1	LEVER (PINCH F) ASSY	
102	3-356-713-01	WASHER	
103	3-907-362-01	SPRING, TORSION	
104	X-3366-970-1	TABLE ASSY, REEL	
105	3-362-308-01	CAP (REEL)	
106	3-356-714-01	WASHER	
107	X-3366-048-1	LEVER (PINCH R) ASSY	
108	X-3366-971-1	TABLE ASSY (B), REEL	
109	3-359-424-01	GEAR (REV GEAR)	
110	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF	
111	3-388-848-01	SCREW (P2×6) (B TIGHT)	
* 112	1-638-020-11	LEAF SW BOARD	
113	3-359-466-01	BELT (FR), SQUARE	
114	X-3367-630-1	FLYWHEEL (REV) ASSY	
115	3-359-417-01	BELT (FLAT), CAPSTAN	
116	X-3367-629-1	FLYWHEEL (FWD) ASSY	
117	3-575-321-00	RETAINER, THRUST, CAPSTAN	
118	3-359-436-11	BASE (THRUST RETAINER), FITTING	
119	3-359-414-01	SCREW (+PTPWH 2×23)	
* 120	A-2007-133-A	MD AUDIO BOARD, COMPLETE	
121	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
HRPE101	A-2003-930-A	DECK ASSY, HEAD (PLAYBACK/RECORD/ERASE)	
M1	X-3365-377-2	MOTOR ASSY (CAPSTAN)	
M2	X-3363-501-2	MOTOR ASSY (REEL)	

6-4. MECHANISM SECTION-2

TCM-190RB52C



Ref. No.	Part No.	Description	Remark
151	X-3363-790-1	CHASSIS ASSY MECHANICAL	
152	3-359-469-01	SPACER	
153	3-359-425-01	SLIDER (REVERSE SLIDER)	
154	3-359-426-01	LEVER (REVERSE LEVER)	
155	3-359-415-11	SLIDER (TRIGGER SLIDER)	
156	3-359-448-01	GEAR (TRIGGER)	
157	3-359-427-01	SLIDER (LEVERSE SLIDER)	
158	3-359-454-01	SPRING, TORSION	

Ref. No.	Part No.	Description	Remark
159	3-359-429-11	SLIDER (BRAKE PLATE)	
160	3-359-420-01	GEAR (CAM GEAR)	
161	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
162	X-3366-569-1	ARM ASSY, FR	
163	3-924-185-11	SPRING (FR ARM), TORSION	
164	3-359-419-11	GEAR (FR GEAR)	
165	3-359-421-01	CLUTCH (REEL DISK)	
166	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 7
ELECTRICAL PARTS LIST

AUDIO

NOTE :
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	A-2007-437-A	AUDIO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C100	1-162-286-31	CERAMIC	220PF	10%	50V
C101	1-137-368-11	FILM	0.0047uF	5%	50V
C102	1-130-475-00	MYLAR	0.0022uF	5%	50V
C103	1-136-165-00	FILM	0.1uF	5%	50V
C105	1-136-165-00	FILM	0.1uF	5%	50V
C107	1-126-059-11	ELECT	10uF	20%	63V
C108	1-126-059-11	ELECT	10uF	20%	50V
C109	1-126-059-11	ELECT	10uF	20%	63V
C200	1-162-286-31	CERAMIC	220PF	10%	50V
C201	1-137-368-11	FILM	0.0047uF	5%	50V
C202	1-130-475-00	MYLAR	0.0022uF	5%	50V
C203	1-136-165-00	FILM	0.1uF	5%	50V
C205	1-136-165-00	FILM	0.1uF	5%	50V
C207	1-126-059-11	ELECT	10uF	20%	63V
C208	1-126-059-11	ELECT	10uF	20%	50V
C209	1-126-059-11	ELECT	10uF	20%	63V
C301-303	1-130-483-00	MYLAR	0.01uF	5%	50V
C305	1-102-125-00	CERAMIC	4700PF	10%	50V
C306	1-102-121-00	CERAMIC	2200PF	10%	50V
C307	1-124-902-00	ELECT	0.47uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN301	1-568-826-11	SOCKET, CONNECTOR 7P			
CN303	1-695-095-11	SOCKET, CONNECTOR 13P			
		< IC >			
IC101	8-759-098-75	IC HA12171NT			

Ref.No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q301	8-729-900-89	TRANSISTOR DTC144ES			
		< RESISTOR >			
R101	1-249-430-11	CARBON	12K	5%	1/4W
R102	1-249-431-11	CARBON	15K	5%	1/4W
R103	1-247-840-00	CARBON	2.4K	5%	1/4W
R104	1-249-433-11	CARBON	22K	5%	1/4W
R105	1-249-428-11	CARBON	8.2K	5%	1/4W
R106	1-249-425-11	CARBON	4.7K	5%	1/4W
R201	1-249-430-11	CARBON	12K	5%	1/4W
R202	1-249-431-11	CARBON	15K	5%	1/4W
R203	1-247-840-00	CARBON	2.4K	5%	1/4W
R204	1-249-433-11	CARBON	22K	5%	1/4W
R205	1-249-428-11	CARBON	8.2K	5%	1/4W
R206	1-249-425-11	CARBON	4.7K	5%	1/4W
R301	1-215-451-00	METAL	18K	1%	1/4W
R303-309	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-247-864-11	CARBON	24K	5%	1/4W
R311	1-247-881-00	CARBON	120K	5%	1/4W
R312	1-249-434-11	CARBON	27K	5%	1/4W
R313	1-249-431-11	CARBON	15K	5%	1/4W
R314	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-249-431-11	CARBON	15K	5%	1/4W
R316	1-249-441-11	CARBON	100K	5%	1/4W
R317	1-247-887-00	CARBON	220K	5%	1/4W
R318	1-249-432-11	CARBON	18K	5%	1/4W
R319	1-249-429-11	CARBON	10K	5%	1/4W
R320	1-249-437-11	CARBON	47K	5%	1/4W
		< VARIABLE RESISTOR >			
RV101	1-230-496-11	RES, ADJ, CARBON 10K (REC LEVEL L)			
RV201	1-230-496-11	RES, ADJ, CARBON 10K (REC LEVEL R)			
**********					

LEAF SW | MD AUDIO

Ref.No.	Part No.	Description			Remark
*	1-638-020-11	LEAF SW BOARD			
		**********			
		< CONNECTOR >			
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P			
		< IC >			
IC81	8-749-924-10	IC NJL5165K-B(H1)			
		< RESISTOR >			
R81	1-249-414-11	CARBON	560	5%	1/4W
R82	1-247-818-11	CARBON	300	5%	1/4W
R83	1-247-834-11	CARBON	1.3K	5%	1/4W
R84	1-249-417-11	CARBON	1K	5%	1/4W
R85	1-249-408-11	CARBON	180	5%	1/4W
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)			
S82	1-571-281-21	SWITCH, LEAF (CrO_2 DET)			
S83	1-571-281-21	SWITCH, LEAF (METAL DET)			
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF SIDE A)			
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF SIDE B)			
S86	1-571-281-21	SWITCH, LEAF (HALF DET)			
**********					
*	A-2007-133-A	MD AUDIO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C13	1-136-153-00	FILM	0.01uF	5%	50V
C14	1-126-177-11	ELECT	100uF	20%	10V
C15	1-124-234-00	ELECT	22uF	20%	16V
C16	1-136-434-11	FILM	120PF	5%	630V
C17	1-102-113-00	CERAMIC	390PF	10%	50V
C18	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C23	1-136-153-00	FILM	0.01uF	5%	50V
C24	1-126-177-11	ELECT	100uF	20%	10V
C25	1-124-234-00	ELECT	22uF	20%	16V
C26	1-136-434-11	FILM	120PF	5%	630V
C27	1-102-113-00	CERAMIC	390PF	10%	50V
C28	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C31-33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C53	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C54	1-136-601-11	FILM	0.01uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C58	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C72	1-109-889-11	ELECT	1uF	20%	50V
		< CONNECTOR >			
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD			
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD			
CNJ72	1-764-902-11	CONNECTOR, FFC/FPC 4P			
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P			
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< IC >			
IC31	8-759-249-21	IC uPC1330AGR			
IC32	8-759-106-02	IC uPC4570G2			
		< JUMPER RESISTOR >			
JW1	1-216-295-11	METAL CHIP	0	5%	1/10W
JW2	1-216-295-11	METAL CHIP	0	5%	1/10W
JW11-27	1-216-296-11	METAL CHIP	0	5%	1/8W
		< COIL >			
L11	1-410-780-11	INDUCTOR	27mH		
L21	1-410-780-11	INDUCTOR	27mH		
		< TRANSISTOR >			
Q51-53	8-729-111-29	TRANSISTOR	2SD1616A-K		
Q71	8-729-216-22	TRANSISTOR	2SA1162-G		
		< RESISTOR >			
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-033-00	METAL CHIP	220	5%	1/10W
R13	1-216-081-00	METAL CHIP	22K	5%	1/10W
R14	1-216-076-00	METAL CHIP	13K	5%	1/10W
R15	1-216-107-00	METAL CHIP	270K	5%	1/10W
R16	1-249-430-11	CARBON	12K	5%	1/4W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-033-00	METAL CHIP	220	5%	1/10W
R23	1-216-081-00	METAL CHIP	22K	5%	1/10W
R24	1-216-076-00	METAL CHIP	13K	5%	1/10W
R25	1-216-107-00	METAL CHIP	270K	5%	1/10W
R26	1-249-430-11	CARBON	12K	5%	1/4W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R33	1-216-073-00	METAL CHIP	10K	5%	1/10W
R41	1-249-393-11	CARBON	10	5%	1/4W
R42	1-249-393-11	CARBON	10	5%	1/4W

Ref.No.	Part No.	Description			Remark
R51	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R52	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R56	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL L)			
RV12	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS L)			
RV21	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL R)			
RV22	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS R)			
RV71	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED NORMAL)			
RV72	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED HIGH)			
		< TRANSFORMER >			
T51	1-423-980-11	TRANSFORMER, BIAS OSCILLATION			
**********					
*	1-657-426-11	PANEL A BOARD			
		**********			
		< CONNECTOR >			
CN811	1-568-852-21	SOCKET, CONNECTOR 9P			
		< DIODE >			
D814	8-719-046-39	LED SEL5821A-TH15 (❚❚)			
D815	8-719-032-87	LED SEL5420S-TP (▶)			
D816	8-719-032-87	LED SEL5420S-TP (◀)			
D821-824	8-719-032-87	LED SEL5420S-TP (BACK LIGHT)			
		< RESISTOR >			
R811	1-249-413-11	CARBON	470	5%	1/4W
R812	1-249-415-11	CARBON	680	5%	1/4W
R813	1-249-413-11	CARBON	470	5%	1/4W
R814	1-249-415-11	CARBON	680	5%	1/4W
		< SWITCH >			
S811	1-554-303-21	SWITCH, TACTILE (■)			
S812	1-554-303-21	SWITCH, TACTILE (▶)			
S813	1-554-303-21	SWITCH, TACTILE (◀)			
S814	1-554-303-21	SWITCH, TACTILE (❚❚)			
S815	1-554-303-21	SWITCH, TACTILE (▶▶AMS)			
S816	1-554-303-21	SWITCH, TACTILE (◀◀AMS)			
**********					
*	1-657-427-11	PANEL B BOARD			
		**********			
		< CONNECTOR >			
* CN801	1-568-856-11	SOCKET, CONNECTOR 13P			
CN802	1-568-852-21	SOCKET, CONNECTOR 9P			
		< DIODE >			
D801	8-719-046-46	LED SEL5221S-TH8F (●REC)			
D802	8-719-046-46	LED SEL5221S-TH8F (CD SYNC)			
		< RESISTOR >			
R801	1-249-413-11	CARBON	470	5%	1/4W
R802	1-249-427-11	CARBON	6.8K	5%	1/4W
R803	1-249-423-11	CARBON	3.3K	5%	1/4W
		< SWITCH >			
S801	1-554-303-21	SWITCH, TACTILE (●REC)			
S802	1-554-303-21	SWITCH, TACTILE (CD SYNC)			
S803	1-762-547-11	SWITCH, SLIDE (DOLBY ON/OFF)			
S804	1-762-547-11	SWITCH, SLIDE (DIRECTION ⇄/🔁)			
**********					
*	A-2007-467-A	POWER BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C151	1-102-978-00	CERAMIC	220PF	5%	50V
C251	1-102-978-00	CERAMIC	220PF	5%	50V
C500	1-136-165-00	FILM	0.1uF	5%	50V
C501	1-126-234-11	ELECT	2200uF	20%	16V
C502	1-126-234-11	ELECT	2200uF	20%	16V
C503	1-126-059-11	ELECT	10uF	20%	50V
C504	1-126-059-11	ELECT	10uF	20%	50V
C505	1-126-096-11	ELECT	10uF	20%	35V
C506	1-126-096-11	ELECT	10uF	20%	35V
C507	1-124-997-11	ELECT	470uF	20%	10V
C508	1-124-997-11	ELECT	470uF	20%	10V
C509	1-126-935-11	ELECT	470uF	20%	6.3V
C510	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN501	1-565-291-11	SOCKET, CONNECTOR 13P			
CN502	1-568-834-21	SOCKET, CONNECTOR 15P			
* CN503	1-568-826-11	SOCKET, CONNECTOR 7P			

POWER SYSTEM CONTROL

Ref.No.	Part No.	Description			Remark
		< DIODE >			
D501-504					
	8-719-200-82	DIODE 11ES2			
D506	8-719-200-82	DIODE 11ES2			
		< PLATE, GROUND >			
* EB501	4-942-204-01	PLATE, GROUND			
		< FERRITE BEAD >			
FB514	1-412-473-21	INDUCTOR 0UH			
FB515	1-410-397-21	FERRITE BEAD INDUCTOR 1.1uH			
		< IC >			
IC501	8-759-288-53	IC LA5617			
IC502	8-759-231-53	IC TA7805S			
		< TRANSISTOR >			
Q101	8-729-900-74	TRANSISTOR DTC143TS			
Q201	8-729-900-74	TRANSISTOR DTC143TS			
		< RESISTOR >			
R151	1-249-421-11	CARBON	2.2K	5%	1/4W
R152	1-249-427-11	CARBON	6.8K	5%	1/4W
R251	1-249-421-11	CARBON	2.2K	5%	1/4W
R252	1-249-427-11	CARBON	6.8K	5%	1/4W
⚠R501	1-219-137-11	FUSIBLE	0.33	10%	1/4W F
⚠R502	1-219-137-11	FUSIBLE	0.33	10%	1/4W F
R503	1-249-417-11	CARBON	1K	5%	1/4W
**********					
*	A-2007-466-A	SYSTEM CONTROL BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C701	1-130-483-00	MYLAR	0.01uF	5%	50V
C704	1-162-294-31	CERAMIC	0.001uF	10%	50V
C705	1-164-159-11	CERAMIC	0.1uF		50V
C707	1-162-306-11	CERAMIC	0.01uF	30%	16V
C708	1-164-159-11	CERAMIC	0.1uF		50V
C709	1-162-290-31	CERAMIC	470PF	10%	50V
C711	1-124-120-11	ELECT	220uF	20%	25V
C712	1-124-910-11	ELECT	47uF	20%	50V
C721	1-124-910-11	ELECT	47uF	20%	50V
C722	1-124-910-11	ELECT	47uF	20%	50V
C723	1-164-159-11	CERAMIC	0.1uF		50V
C724	1-162-288-31	CERAMIC	330PF	10%	50V

Ref.No.	Part No.	Description			Remark
		< CONNECTOR >			
* CN701	1-568-832-11	SOCKET, CONNECTOR 13P			
* CN703	1-568-826-11	SOCKET, CONNECTOR 7P			
* CN704	1-580-784-11	CONNECTOR, BOARD TO BOARD			
* CN705	1-580-784-11	CONNECTOR, BOARD TO BOARD			
CN706	1-695-090-11	PIN, CONNECTOR (PC BOARD) 13P			
CN708	1-568-834-21	SOCKET, CONNECTOR 15P			
* CN710	1-560-060-00	PIN, CONNECTOR 2P			
		< DIODE >			
D702	8-719-987-63	DIODE 1N4148M			
		< IC >			
IC702	8-759-343-04	IC TMP87C846N-4220			
IC703	8-759-165-82	IC PST600E-T			
IC704	8-759-803-42	IC LA6500-FA			
		< TRANSISTOR >			
Q701	8-729-900-80	TRANSISTOR DTC114ES			
Q702	8-729-900-61	TRANSISTOR DTA114ES			
Q703	8-729-900-61	TRANSISTOR DTA114ES			
Q704	8-729-801-84	TRANSISTOR 2SB1013-4			
Q705	8-729-620-05	TRANSISTOR 2SC2603-EF			
		< RESISTOR >			
R700	1-249-397-11	CARBON	22	5%	1/4W
R701	1-249-429-11	CARBON	10K	5%	1/4W
R702	1-249-434-11	CARBON	27K	5%	1/4W
R703	1-249-425-11	CARBON	4.7K	5%	1/4W
R704-706					
	1-249-423-11	CARBON	3.3K	5%	1/4W
R707	1-249-429-11	CARBON	10K	5%	1/4W
R708	1-249-429-11	CARBON	10K	5%	1/4W
R709	1-249-425-11	CARBON	4.7K	5%	1/4W
R710	1-249-425-11	CARBON	4.7K	5%	1/4W
R711	1-249-429-11	CARBON	10K	5%	1/4W
R712	1-249-393-11	CARBON	10	5%	1/4W
R713	1-249-429-11	CARBON	10K	5%	1/4W
R715	1-249-441-11	CARBON	100K	5%	1/4W
R716	1-249-425-11	CARBON	4.7K	5%	1/4W
R721	1-247-807-31	CARBON	100	5%	1/4W
R722	1-249-433-11	CARBON	22K	5%	1/4W
R723	1-249-433-11	CARBON	22K	5%	1/4W
R724	1-249-429-11	CARBON	10K	5%	1/4W
R725	1-249-433-11	CARBON	22K	5%	1/4W
R726	1-249-430-11	CARBON	12K	5%	1/4W
R727	1-247-862-11	CARBON	20K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			Remark
R741-748					
	1-249-417-11	CARBON	1K	5%	1/4W
R751	1-249-410-11	CARBON	270	5%	1/4W
R752	1-249-410-11	CARBON	270	5%	1/4W
R753	1-249-412-11	CARBON	390	5%	1/4W
R754	1-249-409-11	CARBON	220	5%	1/4W
R755	1-249-409-11	CARBON	220	5%	1/4W
R756	1-249-410-11	CARBON	270	5%	1/4W
		< VIBRATOR >			
X701	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
**********					
		MISCELLANEOUS			
		**********			
7	1-769-882-11	WIRE (FLAT TYPE) (7 CORE)			
9	1-773-008-11	WIRE (FLAT TYPE) (15 CORE)			
13	1-775-734-11	CORD, CONNECTION 13P			
60	1-775-429-11	WIRE (FLAT TYPE) (9 CORE)			
71	1-769-882-11	WIRE (FLAT TYPE) (7 CORE)			
78	1-775-428-11	WIRE (FLAT TYPE) (13 CORE)			
121	1-638-983-11	PC BOARD, MOTOR FLEXIBLE			
HRPE101	A-2003-930-A	DECK ASSY, HEAD (PLAYBACK/RECORD/ERASE)			
M1	X-3365-377-2	MOTOR ASSY (CAPSTAN)			
M2	X-3363-501-2	MOTOR ASSY (REEL)			
**********					
		ACCESSORIES & PACKING MATERIALS			
		**********			
*	3-704-333-01	SHEET (STANDARD), PROTECTION			
	3-800-955-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE, GERMAN, DUTCH, SWEDISH, ITALIAN)			
*	3-928-096-01	CUSHION (TC) (FRONT)			
*	3-928-097-01	CUSHION (TC) (REAR)			
*	3-928-098-11	INDIVIDUAL CARTON			
**********					
		**********			
		HARDWARE LIST			
		**********			
#1	7-621-773-93	SCREW (PANEL 2.6 TP2)			
#2	7-621-775-00	SCREW +B 2.6×3			
#3	7-685-646-79	SCREW +BVTP 3×8 TYPE2 N-S			
#4	7-685-780-01	SCREW +PTT 2×3 (S)			
#5	7-621-770-67	SCREW +PTT 2.6×6 (S)			
#6	7-627-556-08	SCREW +P 2.6×2.8			

9-960-274-11

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Home A&V Products Div.

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Quality Engineering Dept.

TC-TX1

SONY

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SUPPLEMENT-1

File this supplement with whe service manual.

Subject: COLOR VARIATION (GOLD TYPE) ADDITION

• The others are common parts so that please refer to the previous issued service manual.

Page	SILVER TYPE			GOLD TYPE		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
17	3	4-975-358-11	CASE	3	4-975-358-51	CASE
	4	4-942-636-21	EMBLEM (No. 3.5), SONY	4	4-942-636-31	EMBLEM (No. 3.5), SONY
18	51	X-3370-555-1	BUTTON (REC) ASSY	51	X-3372-736-1	BUTTON (REC) ASSY
	52	3-925-580-01	BUTTON (EJECT)	52	3-925-580-11	BUTTON (EJECT)
	53	3-925-575-01	PANEL (MOLD), FRONT	53	3-925-575-11	PANEL (MOLD), FRONT
	56	3-925-574-01	PANEL (AL), FRONT	56	3-925-574-11	PANEL (AL), FRONT
	63	3-925-581-01	BUTTON (PLAY)	63	3-925-581-11	BUTTON (PLAY)
	65	3-925-576-01	PANEL, TOP	65	3-925-576-11	PANEL, TOP
	79	3-925-582-01	KNOB (SLIDE)	79	3-925-582-11	KNOB (SLIDE)

Sony Corporation
Home A&V Products Company

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9-960-274-81

HCD-D11/T11

SERVICE MANUAL

US Model
Canadian Model
Tourist Model
HCD-T11

E Model
HCD-D11/T11

Photo: HCD-T11

- HCD-D11/T11 is the tuner, CD player and preamplifier section in CMT-D11/T11.

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM13C-5BD19
Base Unit Name	BU-5BD19
Optical Pick-up Name	KSS-213B/K-N

SPECIFICATIONS

Tuner section

Tuning range
US, Canadian model:
FM : 87.5 – 108 MHz
AM : 531 – 1,710 kHz (at 9 kHz interval)
530 – 1,710 kHz (at 10 kHz interval)
Except US, Canadian model:
FM : 87.5 – 108 MHz
AM : 531 – 1,602 kHz (at 9 kHz interval)
530 – 1,710 kHz (at 10 kHz interval)
Intermediate frequency
FM : 10.7 MHz
AM : 450 kHz
Aerial terminals
FM : 75 ohm unbalanced
AM : External aerial terminal
Timer Quarts lock system
Timer setting
One-minute step
Sleep timer 10-minute step, max. 90 minutes

CD player section

System Compact disc digital audio system
Laser Semiconductor laser
Wavelength 780 – 790 nm
Frequency response
2 Hz – 20 kHz ± 0.5 dB
Signal to noise ratio
More than 90 dB
Harmonic distortion
Less than 0.03%

Preamplifier section

Frequency response
15 Hz – 50 kHz $^{+0}_{-3}$ dB
Inputs PC/MD IN (US, Canadian model) :
MD IN (Except US, Canadian model) :
Stereo phone jack, sensitivity 450 mV, impedance 47 kilohms
Outputs DIGITAL OUT (CD OPTICAL OUT) jack:
Digital connector, –18 dBm, wavelength 660 nm
OUTPUT jack:
Stereo phones jack, 1 V, 1 kohm
PC/MD OUT jack (US, Canadian model):
MD OUT jack (Except US, Canadian model):
Stereo phone jack, 250 mV, 1 kohm
PHONES (headphones) jack:
Stereo mini jack, accepts headphones of 8 ohms or more.

General

Power requirents
US, Canadian model
120 V AC, 60 Hz
Except US, Canadian model
120 V or 220 – 240 V AC, adjustable, 50/60 Hz
Power consumption
25 W (HCD-T11)
20 W (HCD-D11)

– Continued on next page –

MICROFILM

TUNER CD PLAYER

SONY®

Dimensions Approx. 142 × 125 × 252 mm
(w/h/d) (5 5/8 × 5 × 10 inches)
incl. projecting parts and controls
Mass Approx. 3 kg (6 lb 10 oz)

Design and specifications are subject to change without notice.

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CD Section 12

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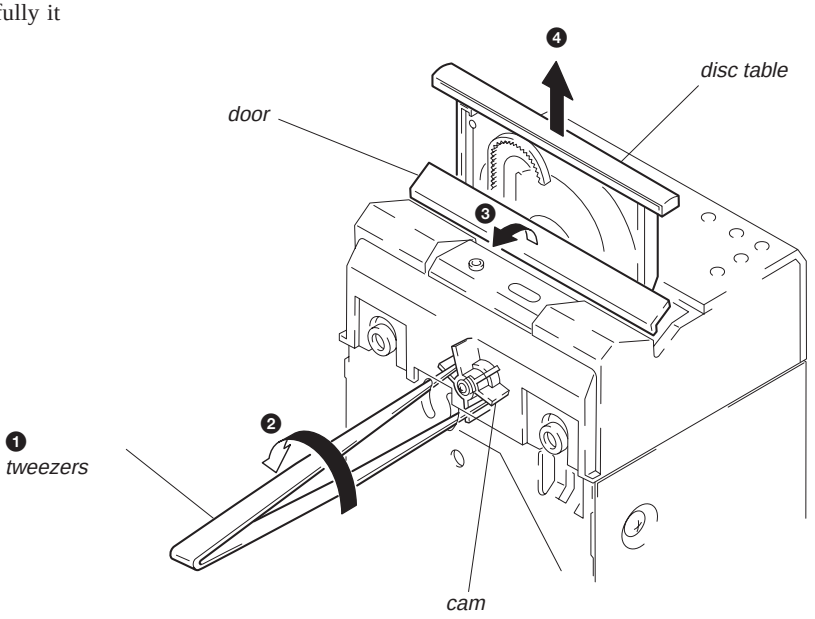
DISC TABLE GETTING OUT PROCEDURE ON THE POWER SUPPLY IS OFF

1. Insert the tweezers to a hole on bottom of the chassis as shown a figure, then tern fully it toward direction ❷.
2. Open the door, pull out the disc table.



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

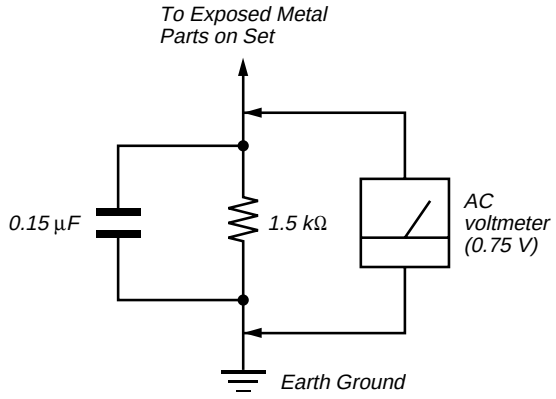
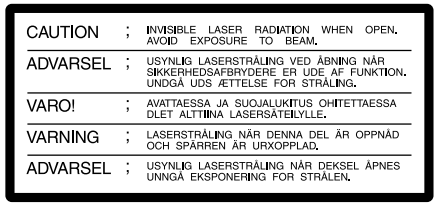


Fig. A. Using an AC voltmeter to check AC leakage.

Laser component in this product is capable of emitting radiation exceding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

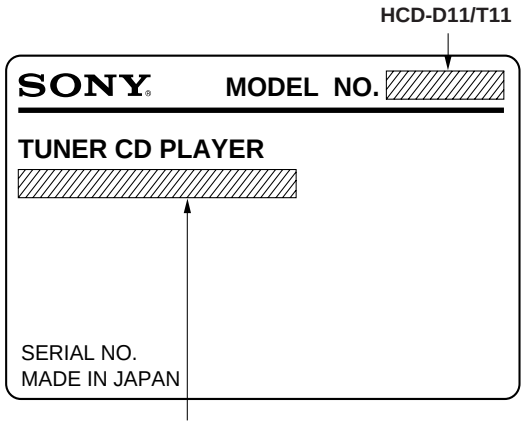
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICE NOTES

MODEL IDENTIFICATION

– Specification Label Printed on Back Panel –



US, Canadian model : AC : 120 V 60 Hz 25 W
Except
US, Canadian model : AC : 120 V/220 – 240 V ∼ 50/60 Hz 20 W (HCD-D11)
: AC : 120 V/220 – 240 V ∼ 50/60 Hz 25 W (HCD-T11)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

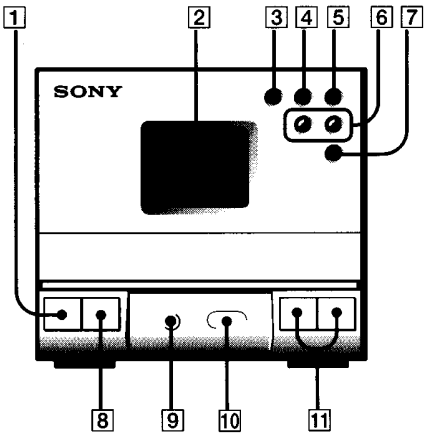
- Keep the temperature of soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

This section is extracted from instruction manual.

Index to Parts and Controls

Front Panel

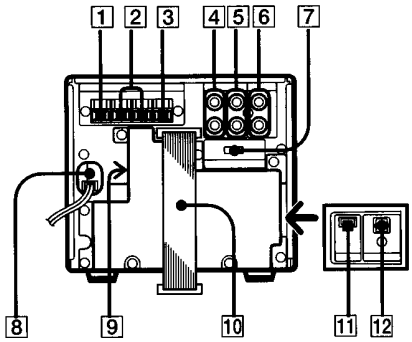
Tuner CD player



1 POWER switch
2 Display window
3 ▶II (play / pause) button
4 ■ (stop) button
5 ⏏ (open/close) button
6 ⏮◀◀ and ▶▶⏭ (AMS / search)/ TUNING + and – buttons
7 BAND button
8 FUNCTION button
9 PHONES jack
10 Remote sensor
11 VOL + and – buttons

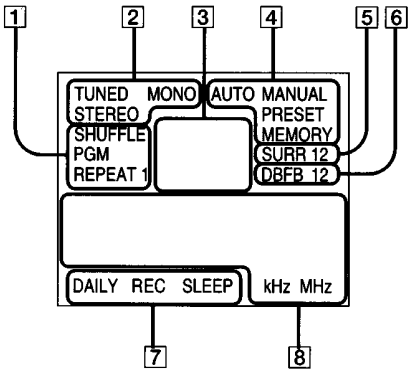
Rear Panel

Tuner CD player



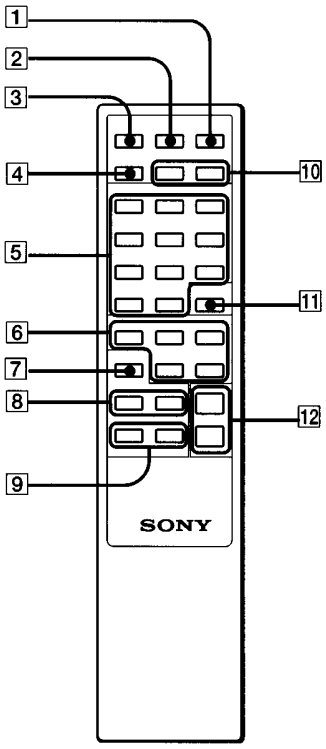
1 FM 75 Ω terminal
2 ⏚ (earth) terminal
3 AM terminal
4 **PC/MD OUT jacks (US, Canadian model)**
4 MD OUT jacks **(Except US, Canadian model)**
5 **PC/MD IN jacks (US, Canadian model)**
5 MD IN jacks **(Except US, Canadian model)**
6 OUTPUT jacks
7 VOLTAGE SELECTOR **(Except US, Canadian model)**
8 Mains lead
9 AC OUTLET connector
10 SYSTEM CONTROL cable **(HCD-T11)**
11 AU BUS (audio bus) connector
12 DIGITAL OUT (CD OPTICAL OUT) jack

Display Window



1 CD play mode indications
2 Tuner indications
3 Track number/band indication
4 AUTO / MANUAL / PRESET / MEMORY indications
5 SURR (surround) indication
6 DBFB indication
7 DAILY / REC / SLEEP timer indications
8 Function / Time / frequency indication

Remote (RM-ST1)

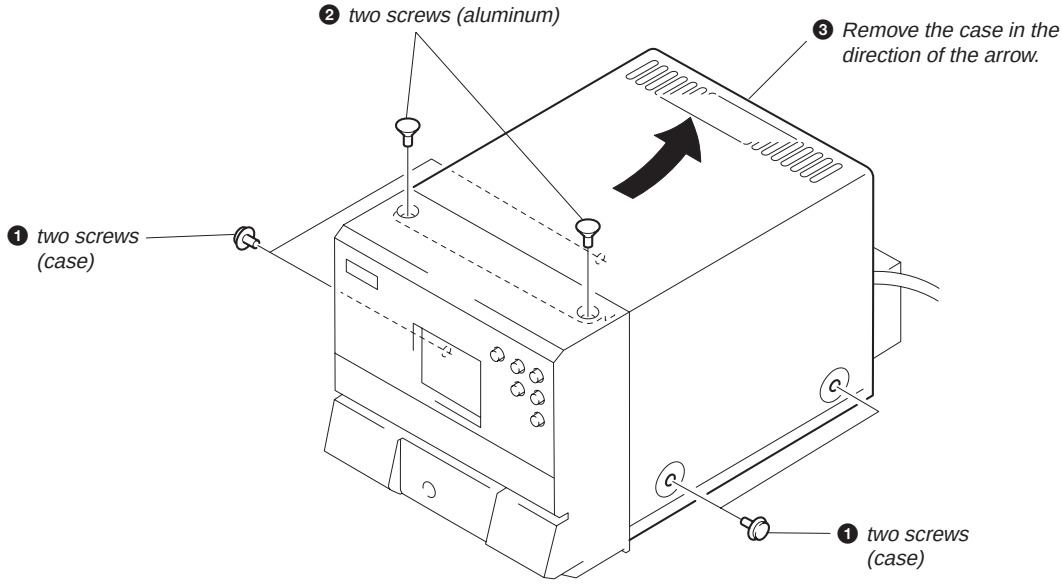


1 SYSTEM POWER switch
2 SLEEP button
3 TIMER SELECT button
4 TIMER SET button
5 CD and tuner operating buttons
► (play) button
II (pause) button
■ (stop) button
BAND button
TUNING + and – /I◄◄ and ►►I (AMS) buttons
STEREO / MONO button
TUNING / PLAY MODE button
REPEAT button
DISPLAY button
MEMORY button
6 Tape operating buttons
◄ (reverse side play) and ► (front side play) buttons
■ (stop) button
◄◄ (fast leftward) and ►► (fast rightward) buttons
7 FUNCTION button
8 Sound adjustment buttons
DBFB button
SURROUND button
9 BALANCE L and R buttons
10 TIMER + and – buttons
11 ENTER button
12 VOL + and – buttons

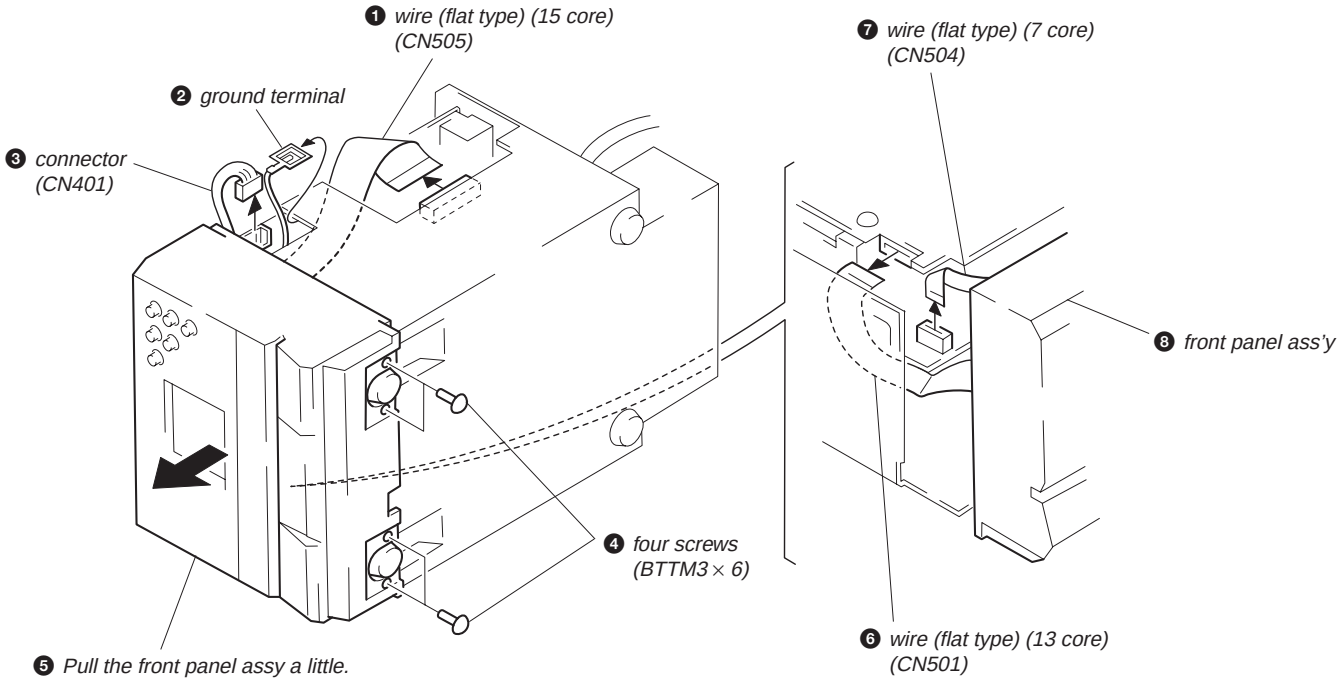
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

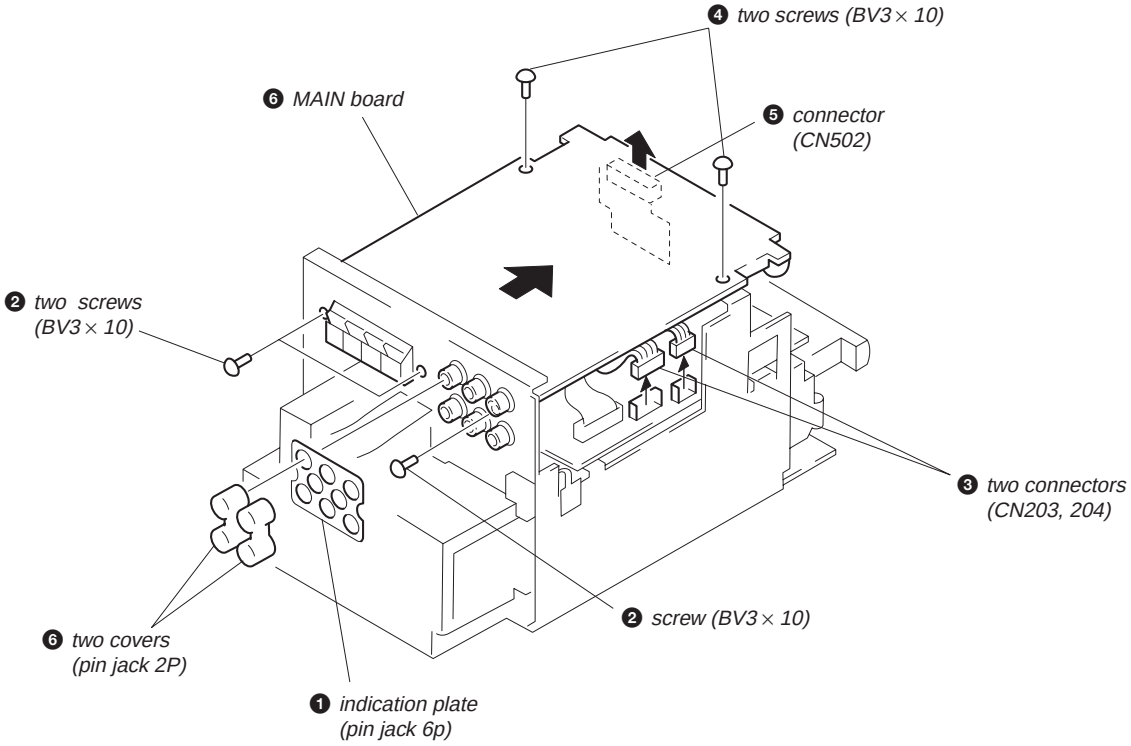
CASE



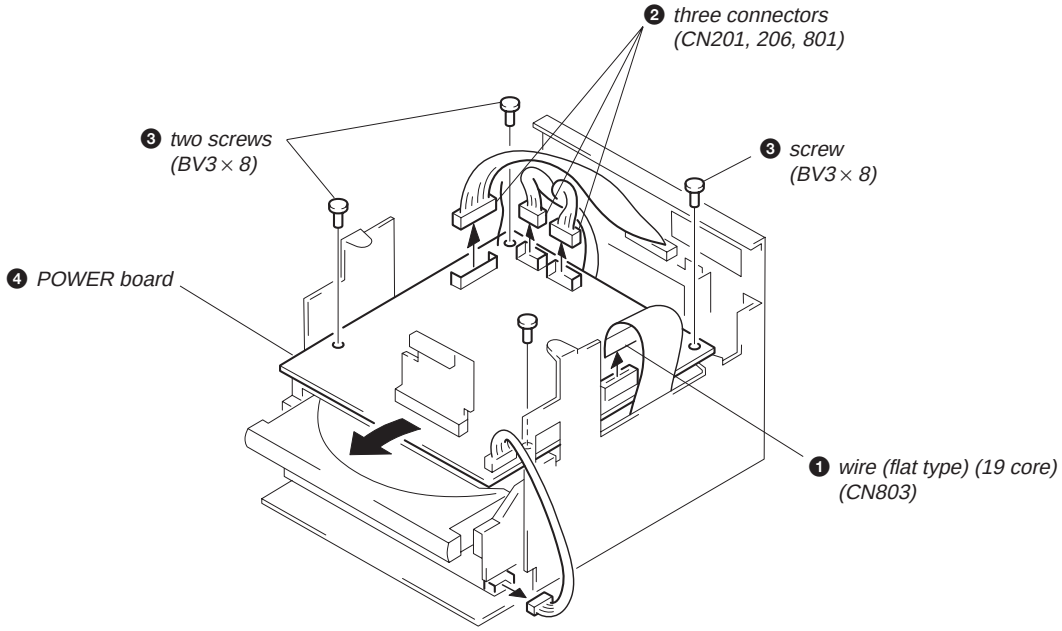
FRONT PANEL ASS'Y


❶ wire (flat type) (15 core) (CN505)
❷ ground terminal
❸ connector (CN401)
❼ wire (flat type) (7 core) (CN504)
❽ front panel ass'y
❹ four screws (BTTM3 × 6)
❻ wire (flat type) (13 core) (CN501)
❺ Pull the front panel assy a little.

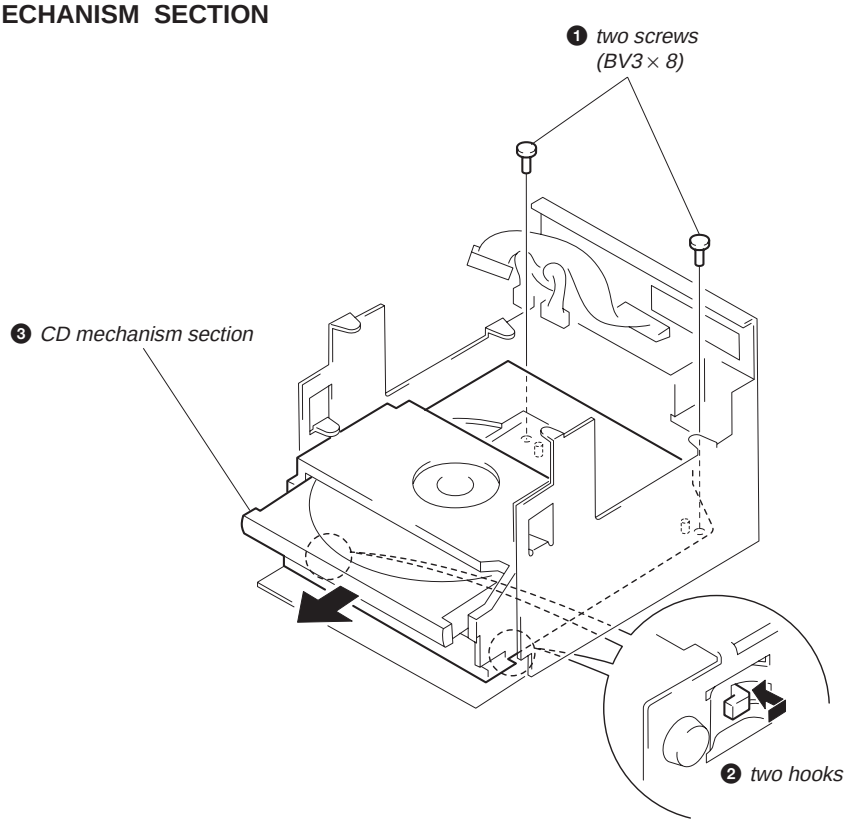
MAIN BOARD


❹ two screws (BV3× 10)
❻ MAIN board
❺ connector (CN502)
❷ two screws (BV3× 10)
❸ two connectors (CN203, 204)
❷ screw (BV3× 10)
❻ two covers (pin jack 2P)
❶ indication plate (pin jack 6p)

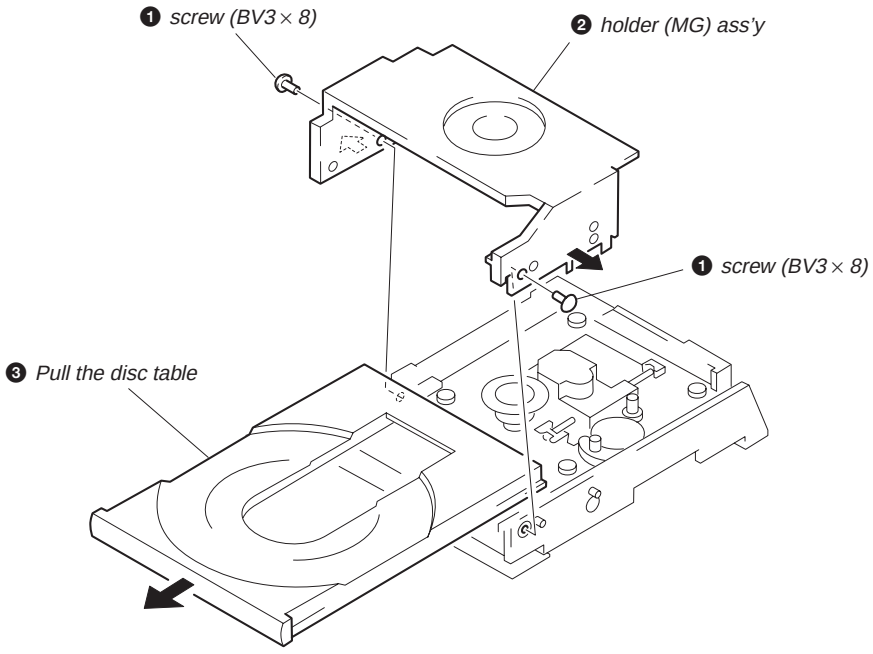
POWER BOARD



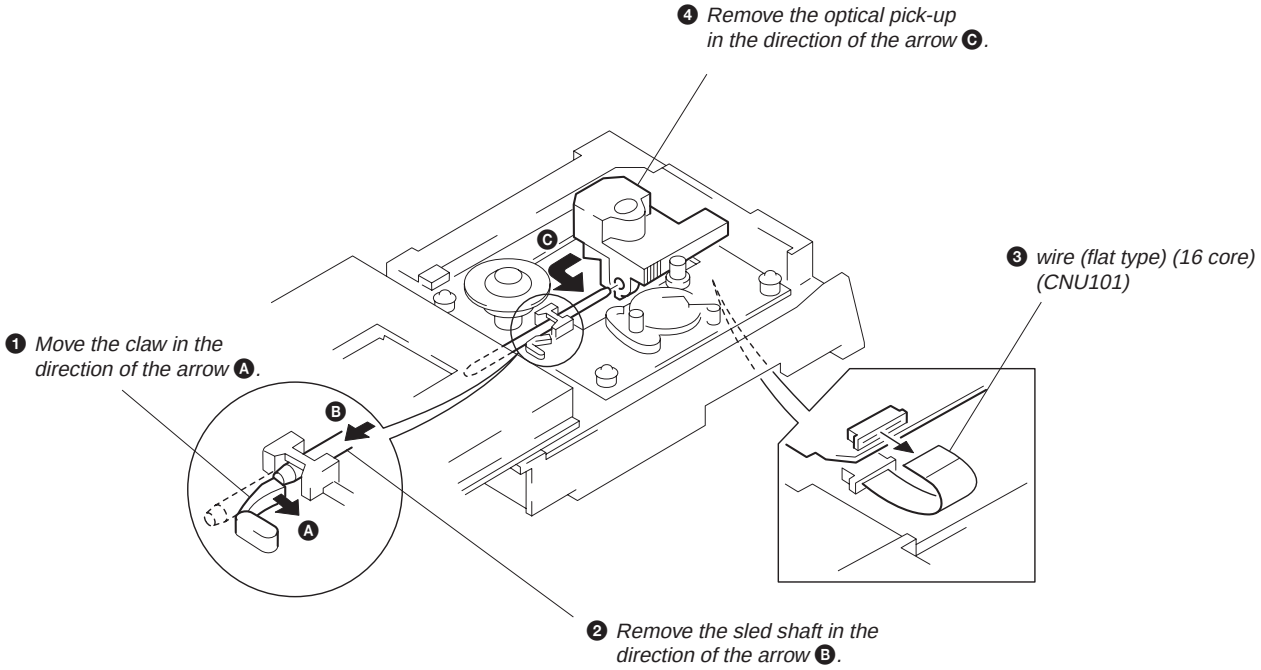
CD MECHANISM SECTION



DISC TABLE



OPTICAL PICK-UP


❹ Remove the optical pick-up in the direction of the arrow Ⓒ.
❸ wire (flat type) (16 core) (CNU101)
❶ Move the claw in the direction of the arrow Ⓐ.
❷ Remove the sled shaft in the direction of the arrow Ⓑ.

SECTION 4
ELECTRICAL ADJUSTMENTS

TUNER SECTION **0 dB=1 µV**

As a front-end (TB101) is difficult to repair if faulty, replace it with new one.
Please note, however, that the following adjustments are possible:

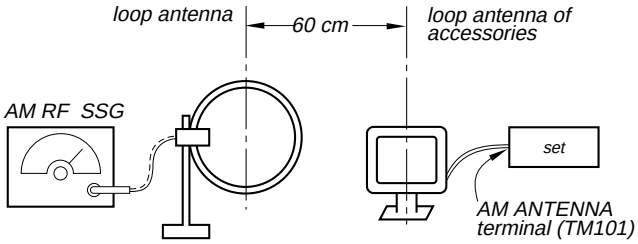
AM Section Adjustment

AM Tuned Level Adjustment

Note: FM Tuned Level Adjustment Should be performed after this AM Tuned Level Adjustment.

Setting:

Band: AM or MW



Carrier frequency: 999 kHz (at 9 kHz step)
1,050 kHz (at 10 kHz step)
Modulation: 400 Hz 30%
Output level: 6.3 mV (76 dBµ)

Procedure:

1. Set AM RF SSG output level to 76 dBµ so that the input level becomes 50 dBµ .
2. Tune the set to 999 kHz (at 9 kHz step) or 1,050 kHz (at 10 kHz step).
3. Adjust AM TUN (W) so that the TUNED light up.

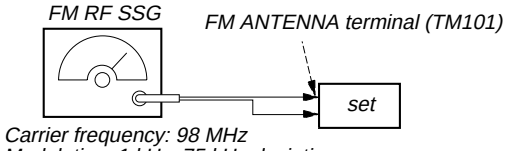
Adjustment Location: Main board (TB101) (See page 13)

FM Section Adjustment

FM Tuned Level Adjustment

Setting:

Band: FM



Carrier frequency: 98 MHz
Modulation: 1 kHz, 75 kHz deviation
Output level: 17.8 µV (25 dBµ)

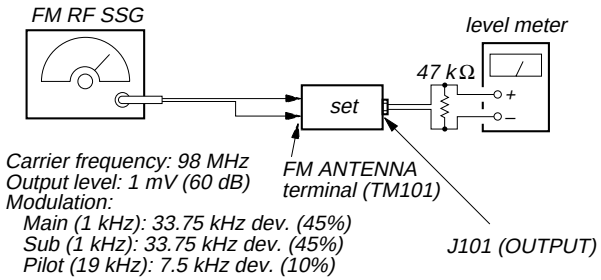
Procedure:

1. Supply a 17.8 µV (25 dBµ) 98 MHz signal to the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust FM TUN (W) so that the TUNED light up.

Adjustment Location: Main board (TB101) (See page 13)

FM Stereo Separation Adjustment

Setting:



Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Modulation:
Main (1 kHz): 33.75 kHz dev. (45%)
Sub (1 kHz): 33.75 kHz dev. (45%)
Pilot (19 kHz): 7.5 kHz dev. (10%)

Procedure:

Turn the set to 98 MHz.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust SEP (W) for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust SEP (W) for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

The separations of both channels should be equal.

Adjustment Location: Main board (TB101) (See page 13)

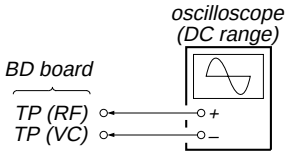
CD SECTION

Note:
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

Focus Bias Adjustment

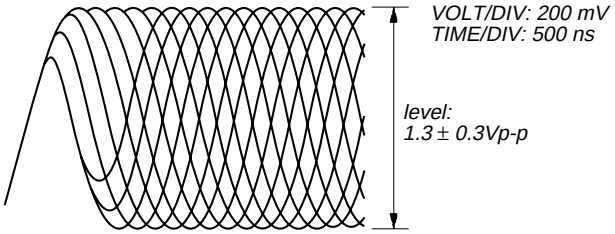
This adjustment is to be done when the optical block is replaced.

Adjustment procedure:



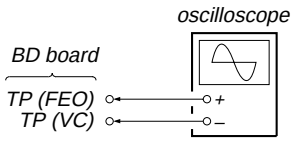
1. Connect oscilloscope to test point TP (VC) and TP (RF) on BD board.
2. Ground display board IC701 pin ㉔ with the lead wire.
3. Turned power switch ON. (Stop mode)
4. Put disc (YEDS-18) in and press the ►II button.
5. Press the ►II button again. (Tracking servo ON)
6. Adjust RV101 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.
7. Remove the lead wire connected in step2.

• RF signal reference waveform (eye pattern)



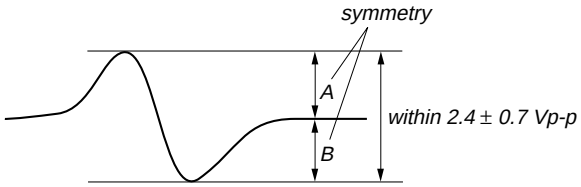
When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

S-Curve Check



Procedure:
1. Connect oscilloscope to test point TP (VC) and TP (FEO) on BD board.
2. Connect between test point TP (FOK) and Ground by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.

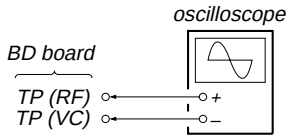
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure that the ratio of A:B or B:A is more than 10:7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

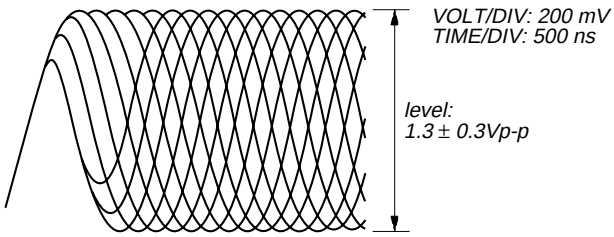
RF Level Check



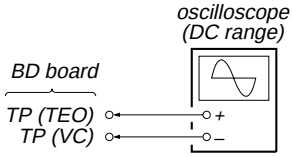
Procedure:
1. Connect oscilloscope to test point TP (VC) and TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and press the ►II button.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform

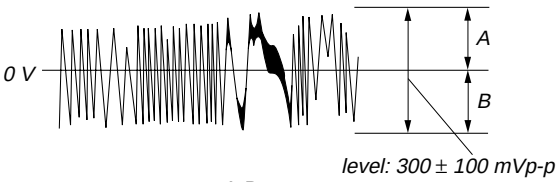


E-F Balance (Traverse) Check



Procedure:
1. Ground display board IC701 pin ㉔ with the lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and press the ►II button.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse waveform



level: 300 ± 100 mVp-p

specified value: • $\frac{A-B}{2\,(A+B)} \times 100$ = *less than ± 7%*

• *A+B = 300 ± 100 mVp-p*

6. Remove the lead wire connected in step1.

Focus/Tracking Gain Adjustment (RV102, RV103)

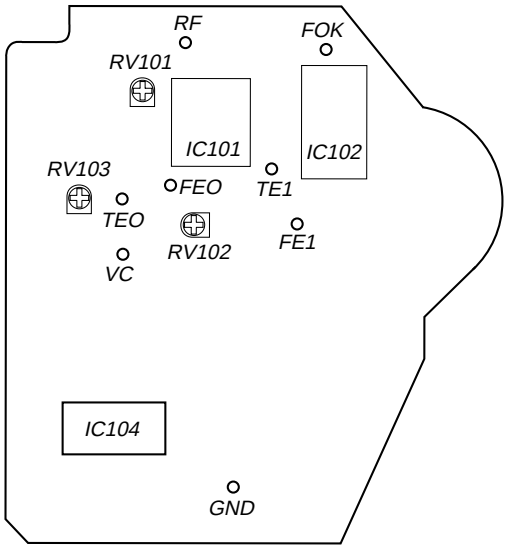
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

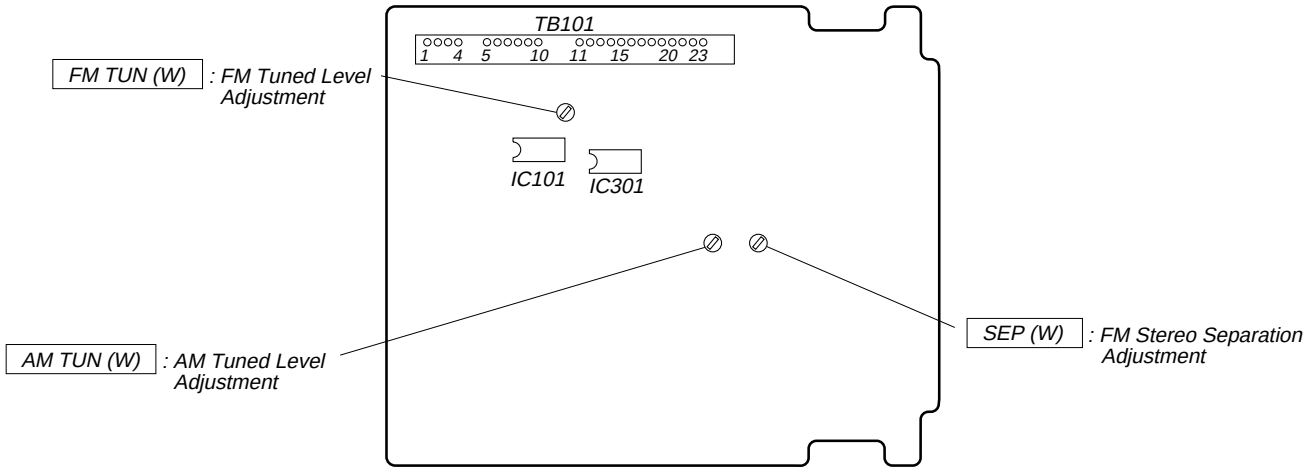
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location:

[BD BOARD] — Component side —

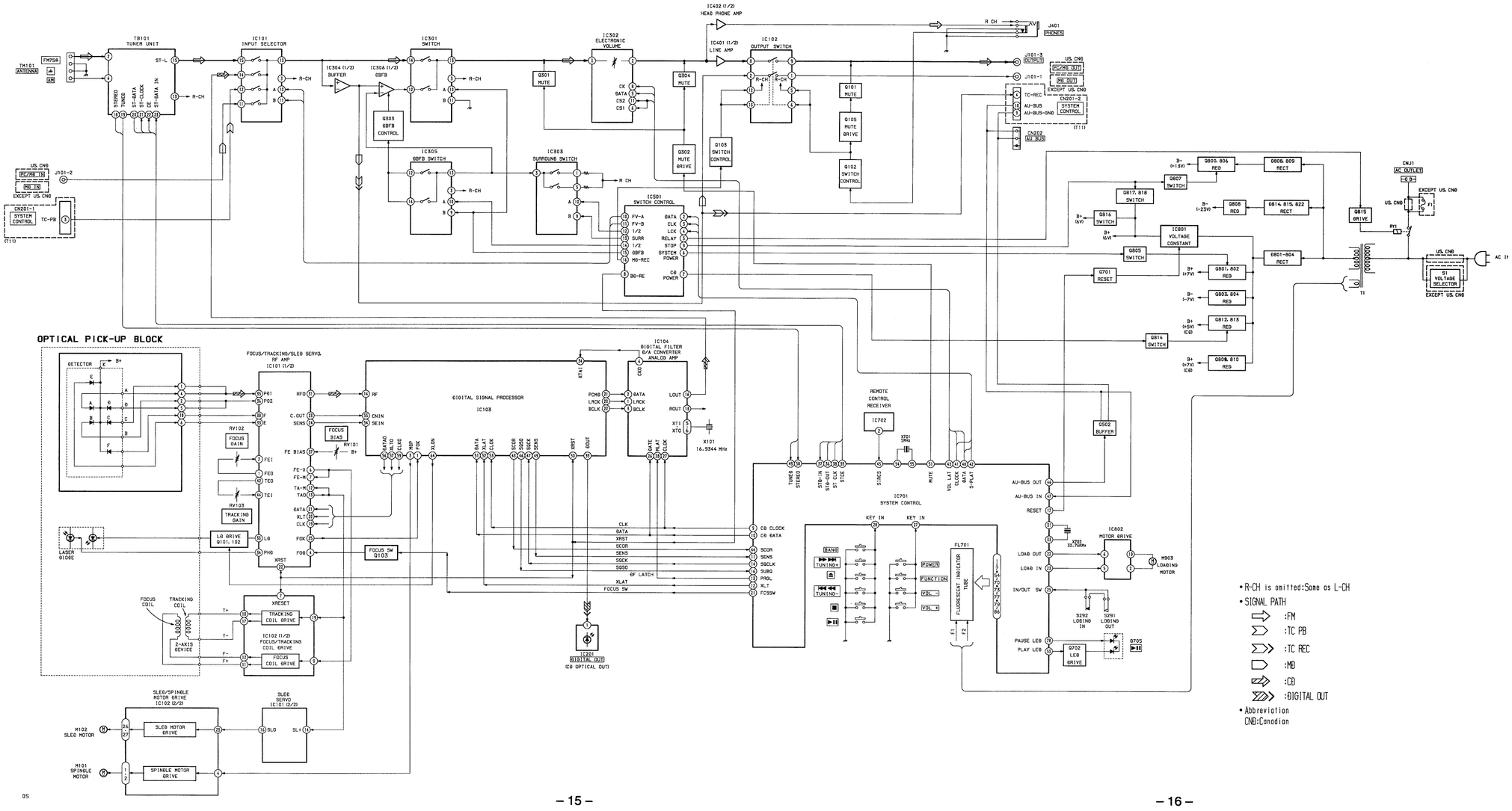


[MAIN BOARD] — Conductor side —



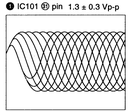
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

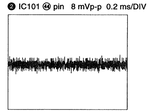


• Waveforms

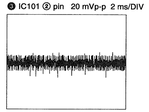
❶ IC101 ㉙ pin 1.3 ± 0.3 Vp-p



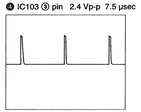
❷ IC101 ㊸ pin 8 mVp-p 0.2 ms/DIV



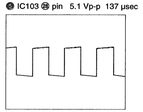
❸ IC101 ② pin 20 mVp-p 2 ms/DIV



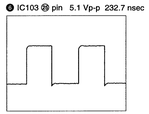
❹ IC103 ③ pin 2.4 Vp-p 7.5 µsec



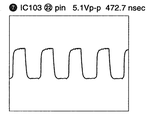
❺ IC103 ㊽ pin 5.1 Vp-p 137 µsec



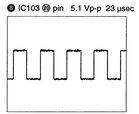
❻ IC103 ㉜ pin 5.1 Vp-p 232.7 nsec



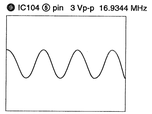
❼ IC103 ㉝ pin 5.1Vp-p 472.7 nsec



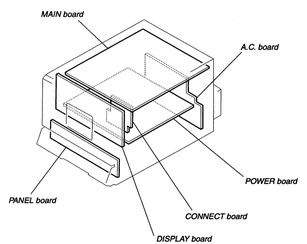
❽ IC103 ㉞ pin 5.1 Vp-p 23 µsec

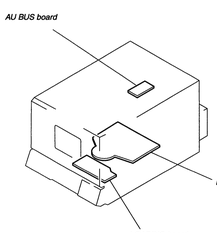


❾ IC104 ⑤ pin 3 Vp-p 16.9344 MHz

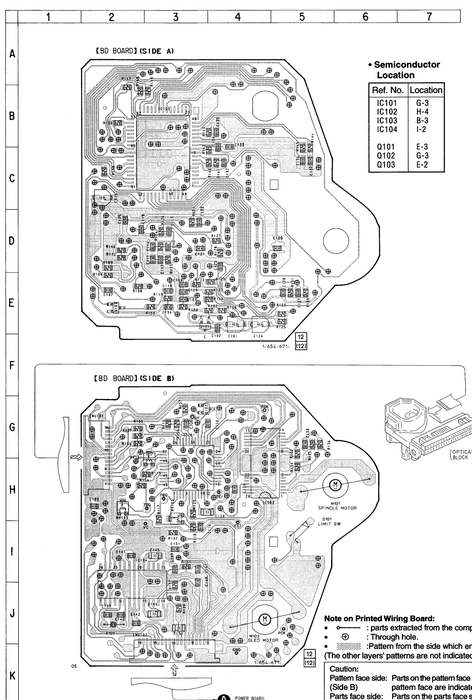


• Circuit Boards Location





5-2. PRINTED WIRING BOARD –BD SECTION–



• Semiconductor Location

Ref. No.	Location
IC101	G-3
IC102	H-4
IC103	B-3
IC104	I-2
Q101	E-3
Q102	G-3
Q103	E-2

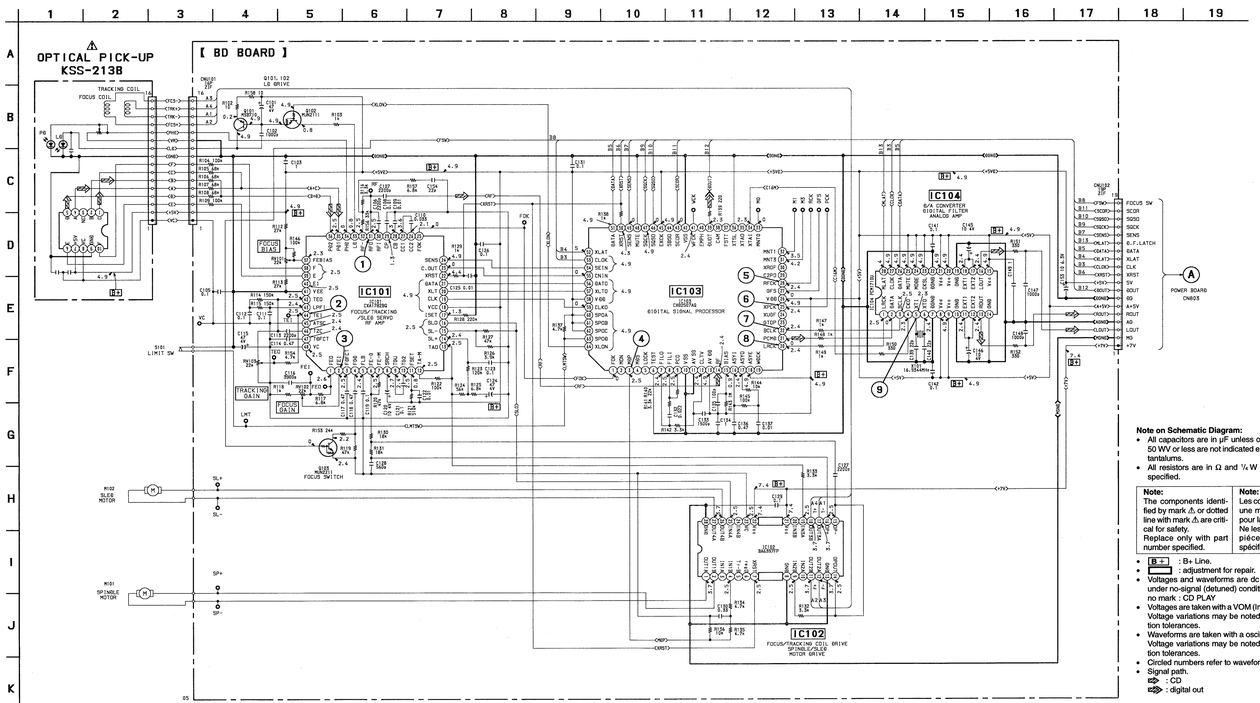
Note on Printed Wiring Board:
- ⟷ : parts extracted from the component side.
- ⊕ : Through hole.
- : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:

Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

5-3. SCHEMATIC DIAGRAM –BD SECTION– • See page 36 for IC Block Diagram.



Note on Schematic Diagram:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

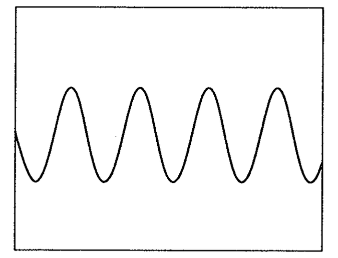
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : CD ⇨ : digital out

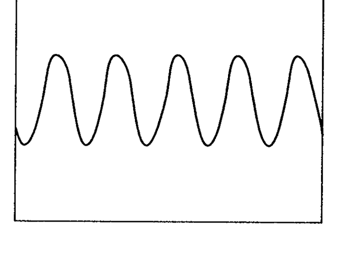
5-4. SCHEMATIC DIAGRAM –MAIN SECTION– • See page 35 for IC Block Diagram.

• **Waveforms**

❶ IC701 ㉛ pin 3.2 Vp-p 32.768 kHz



❷ IC701 ㉟ pin 5.9 Vp-p 5 MHz



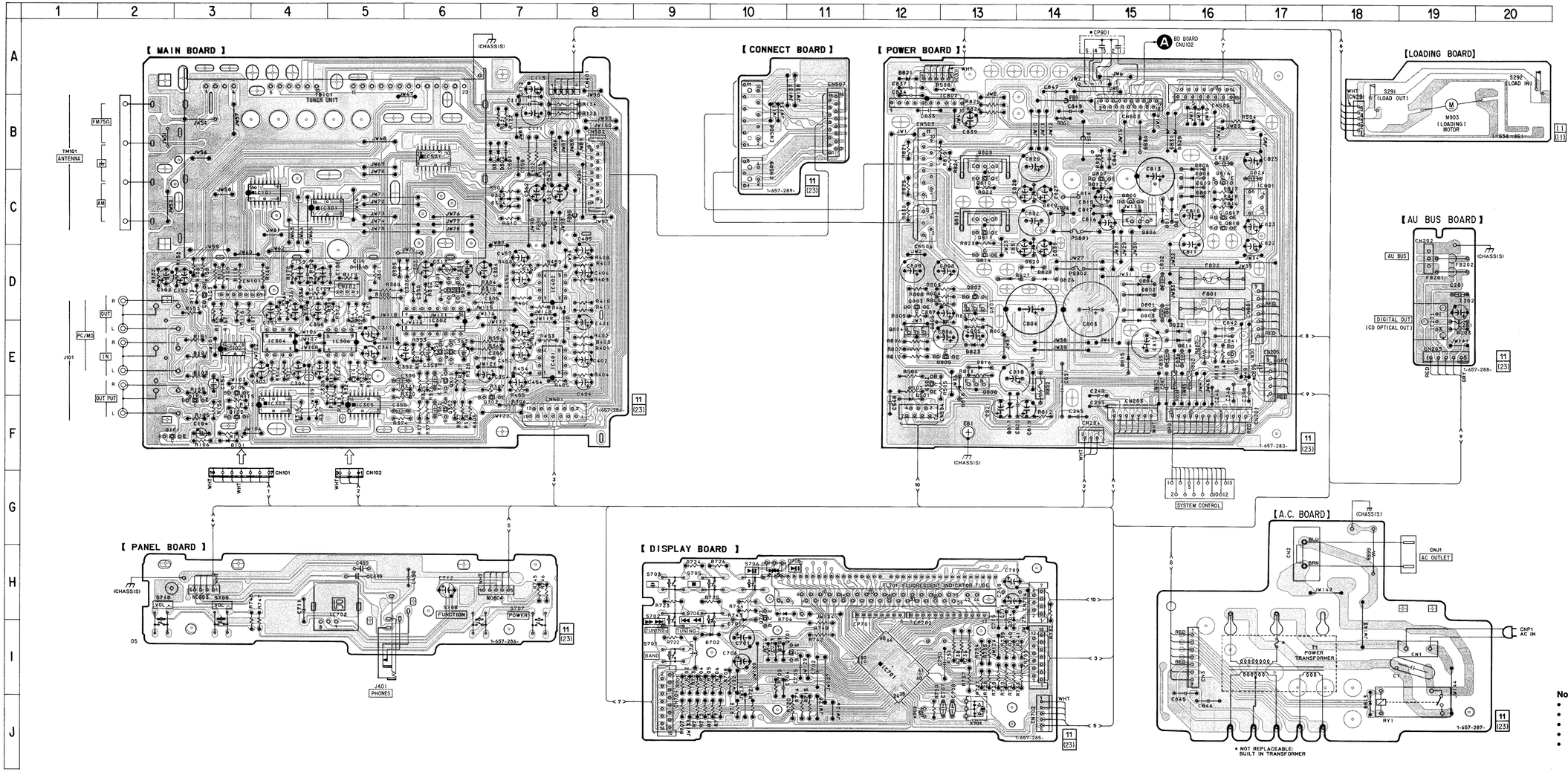
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ⊸w∿⊸ : fusible resistor.
- ▭ : panel designation.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B + Line.
- B– : B – Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ⊳ : PB (TC)
  ⊳⊳ : REC (TC)
  ▷ : PB (MD)
  ⇨ : CD
  ⇨ : digital out
- Abbreviation
  CND : Canadian
  HK : Hong Kong
  JE : Tourist
  MY : Malaysia
  SP : Singapore

5-5. PRINTED WIRING BOARDS –MAIN SECTION– (US, Canadian model) • See page 17 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	F-3	IC301	C-4
D301	B-7	IC302	E-6
D302	B-7	IC303	F-4
D303	C-7	IC304	E-4
D304	C-7	IC305	F-5
D305	D-5	IC306	E-5
D306	D-6	IC401	E-7
D501	F-12	IC402	D-7
D701	I-10	IC501	B-6
D702	I-10	IC701	I-12
D703	I-10	IC702	H-5
D704	H-13	IC801	C-17
D705	H-10	IC802	B-13
D706	H-10		
D801	D-15	Q101	F-2
D802	D-15	Q102	F-3
D803	D-15	Q103	D-3
D804	D-15	Q105	E-3
D805	E-13	Q151	F-3
D806	B-16	Q301	D-6
D807	C-16	Q302	F-7
D808	C-16	Q303	E-6
D809	C-16	Q304	D-6
D810	C-16	Q351	E-6
D811	C-15	Q352	F-6
D812	C-15	Q354	E-6
D813	J-18	Q502	E-12
D814	E-16	Q701	I-11
D815	E-15	Q702	H-10
D816	E-13	Q800	C-15
D817	F-13	Q801	D-13
D818	E-13	Q802	D-13
D819	C-14	Q803	D-12
D820	D-14	Q804	E-12
D821	A-12	Q805	E-13
D822	E-16	Q806	C-15
D823	E-13	Q807	C-15
D826	D-14	Q808	E-13
D827	D-13	Q809	B-13
D828	D-14	Q810	C-13
D829	B-16	Q812	C-13
D830	B-15	Q813	C-13
D831	B-15	Q814	D-13
		Q815	E-16
IC101	C-4	Q816	C-16
IC102	E-3	Q817	C-16
IC201	E-19	Q818	C-16

Note on Printed Wiring Board:

- o——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- △ : internal component.
- ▨ : Pattern from the side which enables seeing.

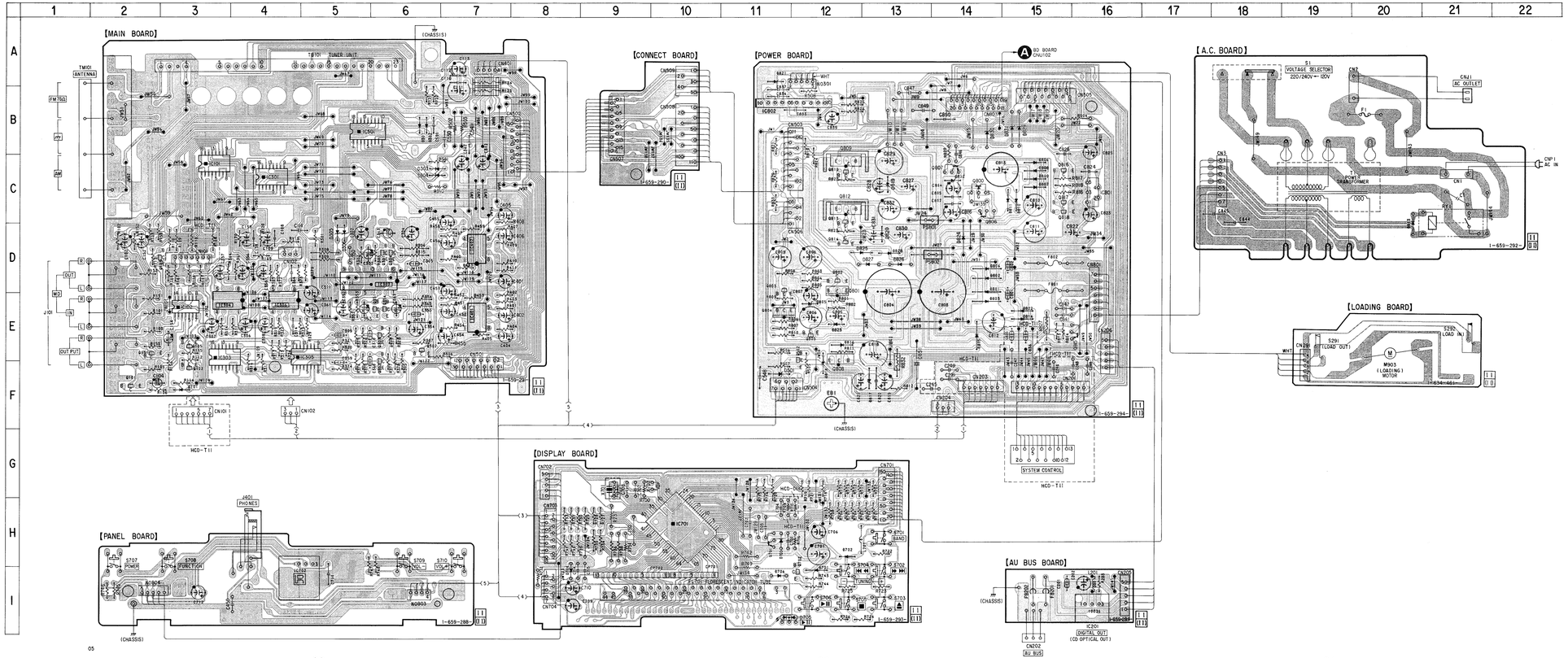
5-6. PRINTED WIRING BOARDS –MAIN SECTION– (EXCEPT US, Canadian model) • See page 17 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	F-3	IC201	I-16
D301	B-5	IC301	C-4
D302	B-6	IC302	D-6
D303	C-6	IC303	E-3
D304	C-6	IC304	E-3
D305	D-5	IC305	E-5
D306	D-5	IC306	E-4
D501	F-11	IC401	E-7
D701	I-12	IC402	D-7
D702	H-12	IC501	B-5
D703	H-11	IC701	H-10
D704	I-8	IC702	I-4
D705	I-12	IC801	C-16
D706	I-11	IC802	B-11
D801	D-14		
D802	D-14	Q101	F-2
D803	E-14	Q102	F-3
D804	D-14	Q103	D-2
D805	E-12	Q105	E-3
D806	C-15	Q151	E-2
D807	C-15	Q301	D-6
D808	C-15	Q302	E-6
D809	C-15	Q303	E-6
D810	C-15	Q304	D-6
D811	C-15	Q351	E-6
D812	C-14	Q352	F-6
D813	D-20	Q354	E-6
D814	E-15	Q502	E-12
D815	E-14	Q701	H-11
D816	E-12	Q702	I-12
D817	F-13	Q800	C-14
D818	F-12	Q801	D-12
D819	C-13	Q802	D-12
D820	D-13	Q803	D-11
D821	A-11	Q804	E-11
D822	E-15	Q805	E-12
D823	E-12	Q806	C-14
D824	D-14	Q807	C-14
D825	D-13	Q808	F-12
D826	D-13	Q809	C-12
D827	D-13	Q810	C-12
D828	D-13	Q812	C-12
D829	B-15	Q813	C-12
D830	B-14	Q814	D-12
D831	B-15	Q815	E-16
		Q816	C-15
IC101	C-3	Q817	C-15
IC102	E-3	Q818	C-15

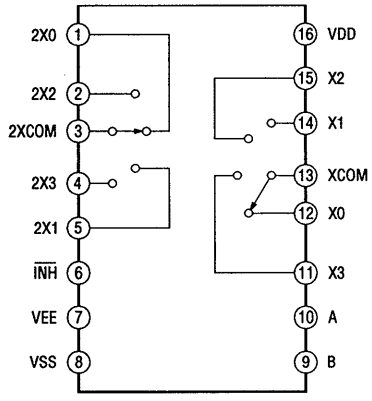
Note on Printed Wiring Board:

- ⟷ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- △ : internal component.
- ▒ : Pattern from the side which enables seeing.

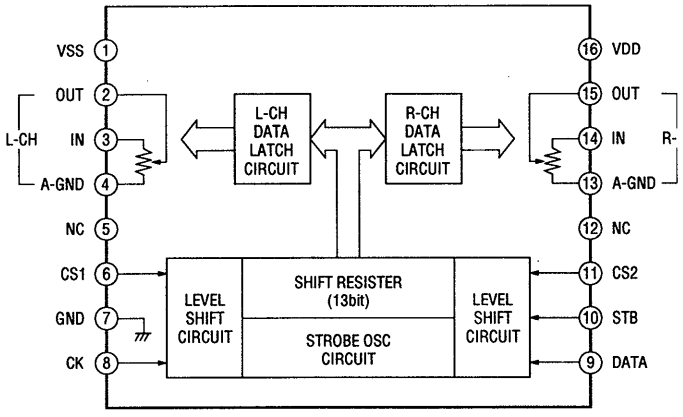


• IC Block Diagrams –MAIN Section–

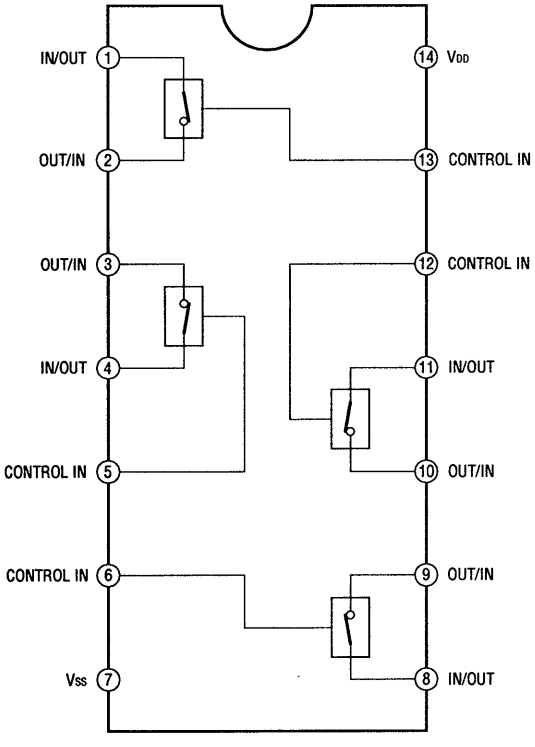
IC101, 301, 303, 305 MC14052BF



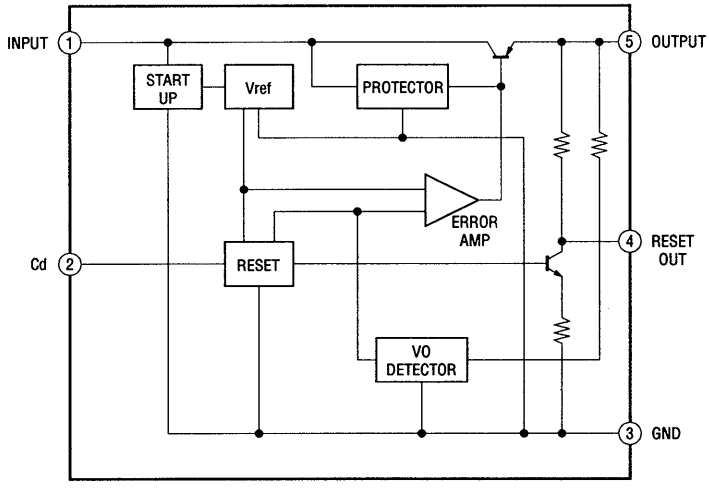
IC302 TC921OP



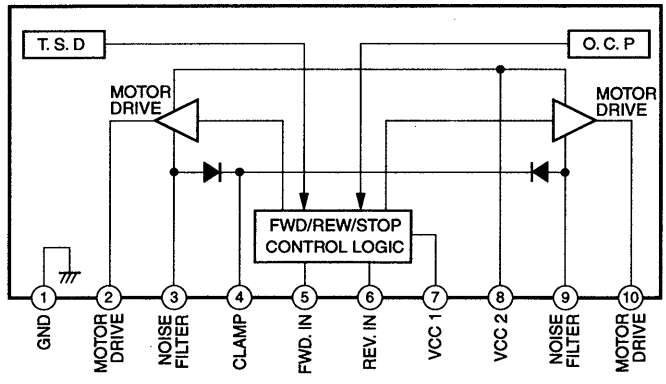
IC102 MC14066BF



IC801 L78MR06

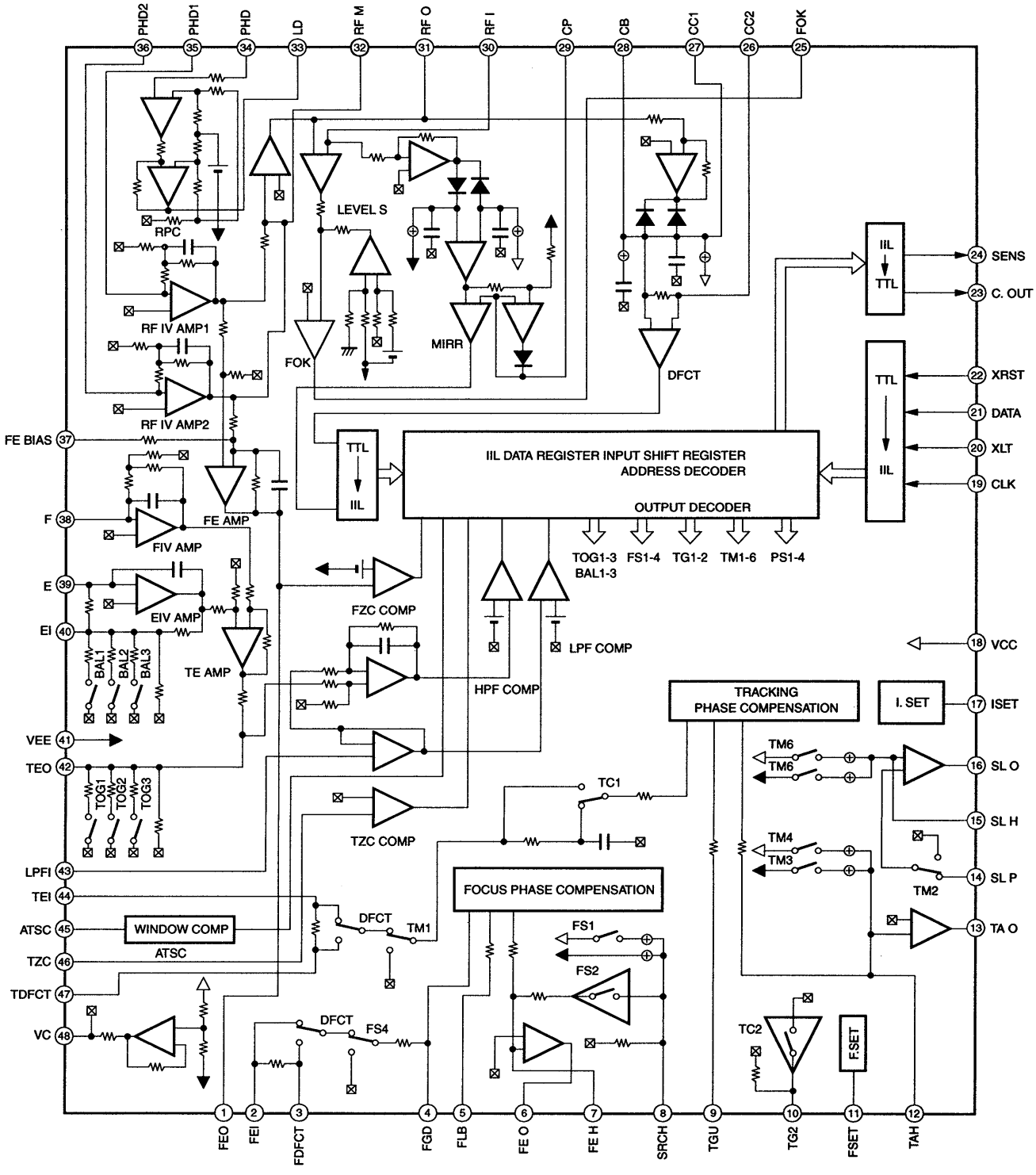


IC802 LB1641

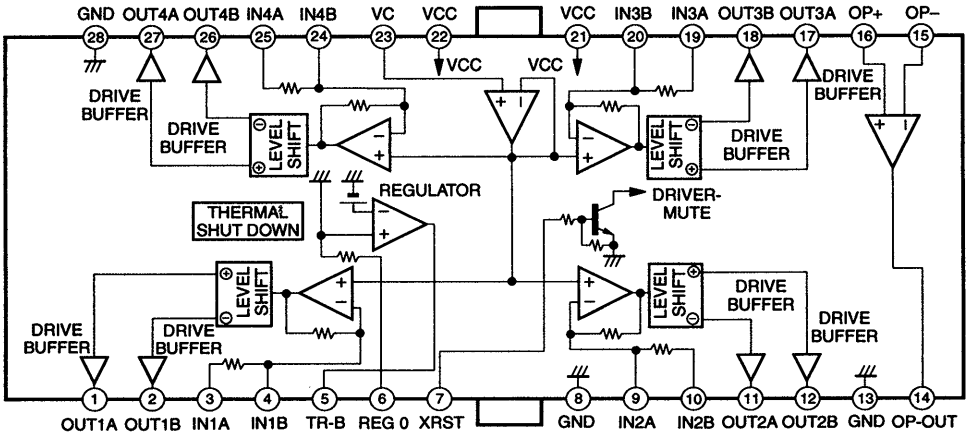


– BD Section –

IC101 CXA1782BQ



IC102 BA6397FP


GND OUT4A OUT4B IN4A IN4B VC VCC VCC IN3B IN3A OUT3B OUT3A OP+ OP–
28 27 26 25 24 23 22 21 20 19 18 17 16 15
VCC VCC
DRIVE BUFFER
DRIVE BUFFER
LEVEL SHIFT
DRIVE BUFFER
LEVEL SHIFT
DRIVE BUFFER
DRIVE BUFFER
REGULATOR
THERMAL SHUT DOWN
DRIVER-MUTE
LEVEL SHIFT
LEVEL SHIFT
DRIVE BUFFER
DRIVE BUFFER
DRIVE BUFFER
DRIVE BUFFER
1 2 3 4 5 6 7 8 9 10 11 12 13 14
OUT1A OUT1B IN1A IN1B TR-B REG 0 XRST GND IN2A IN2B OUT2A OUT2B GND OP-OUT

5-7. IC PIN FUNCTION DESCRIPTION

DISPLAY Board IC701 µPD78044AGF-102-3B9 (System Control)

Pin No.	Pin Name	I/O	Function
1	7G	O	LCD drive
2	6G		
3	5G		
4	4G		
5	3G		
6	2G		
7	1G		
8	VDD	–	Power supply (+5 V)
9	CD CLOCK	O	CD serial clock output
10	CD DATA	O	CD serial data output
11	SENSE	I	SENS input from DSP (CXD2507AQ)
12	XLT	O	Latch output to DSP (CXD2507AQ)
13	PRGL	O	Latch output to D/A converter (PCM710µ)
14	SQCLK	O	Sub-code Q data scanning clock output
15	–	–	Not used (OPEN)
16	SUB Q	I	Sub-code Q data serial input
17	RESET	–	System reset
18	BACK UP	I	Back up mode input terminal
19	MD/TC	I	MD/TC select data input terminal
20	A/D GND	–	A/D converter Ground terminal
21	FCS SW	O	Focus gain select data output
22	LOAD OUT	O	Loading motor (M903) load out output
23	LOAD IN	O	Loading motor (M903) load in output
24	ADJ	I	CD test mode input “L”: Test mode
25	IN/OUT SW	I	CD tray loading IN/OUT switch input
26	VERSION	I	Model select input
27	KEY IN	I	CD control key input
28	KEY IN	I	Amplifier control key input
29	A/DVDD	–	A/D converter power supply (connect to VDD)
30	AVREF	–	A/D converter refernce voltage input
31	XT1	–	Sub system clock (32.768kHz)
32	XT2	–	Sub system clock (32.768kHz)
33	GND	–	Ground
34	X1	–	Main system clock (5MHz)
35	X2	–	Main system clock (5MHz)
36	STD OUT	O	Data output to LC72130
37	STD IN	I	Data input from LC72130
38	ST CLK	O	Clock output to LC72130
39	ST CE	O	Latch output to LC72130
40	DATA	O	Data output to TC9210 (Electrical volume) and BU2092 (Serial/Parallel)

Pin No.	Pin Name	I/O	Function
41	CLOCK	O	Clock output to TC9210 (Electrical volume) and BU2092 (Serial/Parallel)
42	S-P LATCH	O	Latch output to BU2092
43	VOL LATCH	O	Latch output to TC9210
44	SCOR	I	Sub-code sync SO + SI detection input
45	SIRCS	I	SIRCS code input from remote commander
46	AUB OUT	O	Audio Bus output
47	AUB IN	I	Audio Bus input
48	GND	–	Ground
49	TUNED	I	FM/AM tuning identification
50	STEREO	I	FM stereo identification
51	MUTE	O	Mute output
52	VDD	–	Power supply (+5 V)
53	PLAY LED	O	PLAY LED output
54	P24	O	LCD drive
55	P22		
56	P21, 23		
57	P20		
58	P19		
59	P18		
60	P17		
61	P16		
62	P15		
63	P14		
64	P13		
65	P12		
66	P11		
67	P10		
68	P9		
69	P8		
70	P7		
71	–24V	–	LCD drive –24 V power supply
72	P6	O	LCD drive
73	P5		
74	P4		
75	P3		
76	P2		
77	P1		
78	PAUSE LED	O	PAUSE LED output
79	9G	O	LCD drive
80	8G		

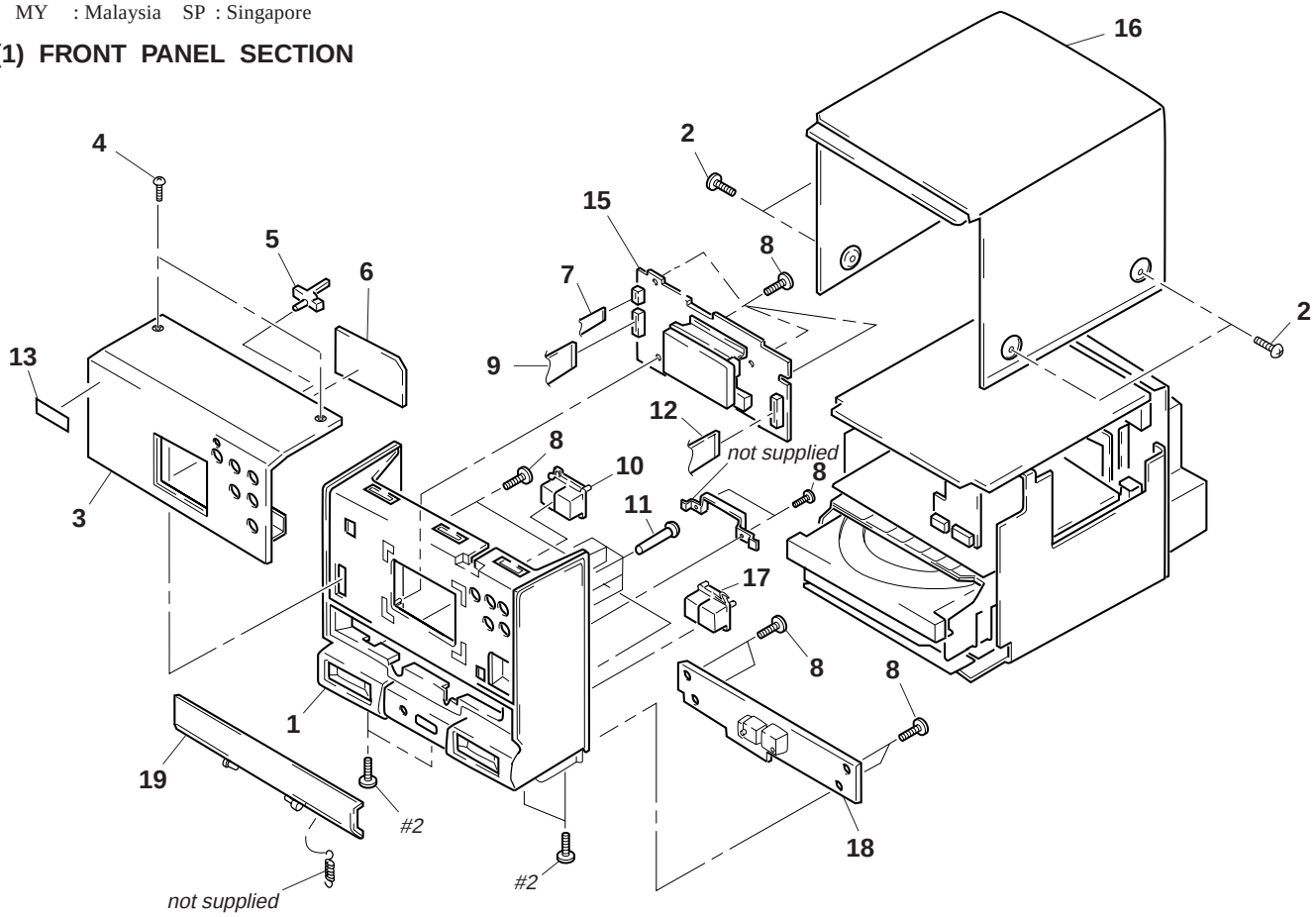
SECTION 6
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearrance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  CND : Canadian HK : Hong Kong JE : Tourist
  MY : Malaysia SP : Singapore
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

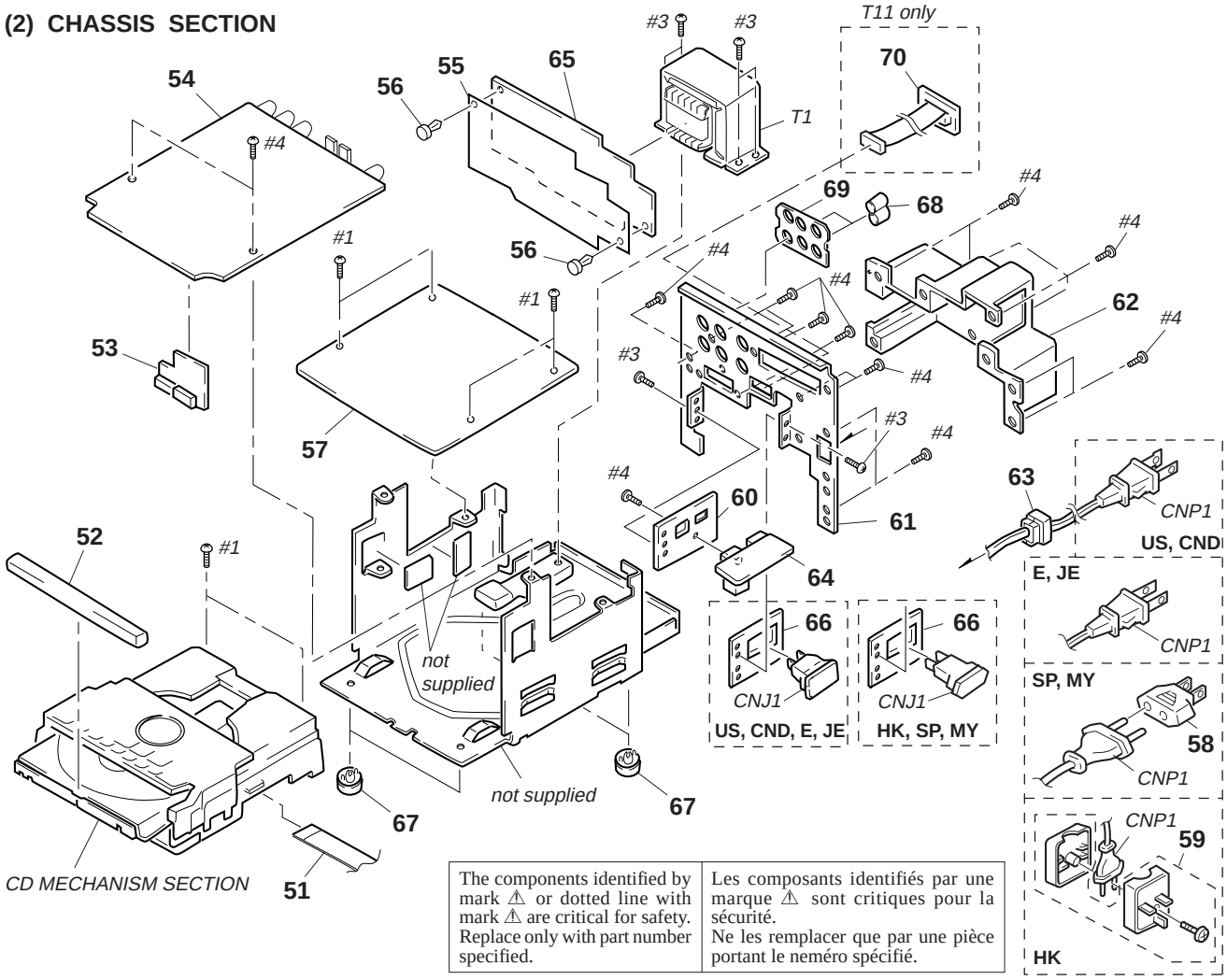
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

(1) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4946-207-1	PANEL SUB ASSY, FRONT (US, CND, E, HK, SP, MY, JE) (SILVER)	
1	X-4947-698-1	PANEL SUB ASSY, FRONT (HK) (GOLD)	
2	3-704-366-61	SCREW (CASE)	
3	4-975-343-02	PANEL (AL), FRONT (US, CND, E, HK, SP, MY, JE) (SILVER)	
3	4-975-343-11	PANEL (AL), FRONT (HK) (GOLD)	
4	4-975-365-01	SCREW (ALUMINUM)	
5	4-975-346-01	INDICATOR (PLAY)	
6	4-975-345-01	PLATE (WINDOW), INDICATION	
7	1-775-731-11	WIRE (FLAT TYPE) (7 CORE)	
8	4-951-620-01	SCREW (2.6X8), +BVTP	
9	1-775-732-11	WIRE (FLAT TYPE) (13 CORE)	
10	4-975-351-01	BUTTON (POWER) (US, CND, E, HK, SP, MY, JE) (SILVER)	
10	4-975-351-11	BUTTON (POWER) (HK) (GOLD)	
11	4-975-355-01	BUTTON (PLAY) (US, CND, E, HK, SP, MY, JE) (SILVER)	
11	4-975-355-11	BUTTON (PLAY) (HK) (GOLD)	
12	1-775-733-11	WIRE (FLAT TYPE) (15 CORE)	
13	4-942-636-21	EMBLEM (NO. 3.5), SONY (US, CND, E, HK, SP, MY, JE) (SILVER)	
13	4-942-636-31	EMBLEM (NO. 3.5), SONY (HK) (GOLD)	
* 15	A-4378-477-A	DISPLAY BOARD, COMPLETE (E)	
* 15	A-4378-886-A	DISPLAY BOARD, COMPLETE (D11)	
* 15	A-4378-911-A	DISPLAY BOARD, COMPLETE (T11: HK, SP, MY)	
* 15	A-4390-139-A	DISPLAY BOARD, COMPLETE (US, CND)	
* 15	A-4392-535-A	DISPLAY BOARD, COMPLETE (JE)	
16	4-975-358-11	CASE (US, CND, E, HK, SP, MY, JE) (SILVER)	
16	4-975-358-51	CASE (HK) (GOLD)	
17	4-975-352-01	BUTTON (VOLUME) (US, CND, E, HK, SP, MY, JE) (SILVER)	
17	4-975-352-11	BUTTON (VOLUME) (HK) (GOLD)	
* 18	1-657-286-11	PANEL BOARD (US, CND)	
* 18	1-659-288-11	PANEL BOARD (EXCEPT US, CND)	
19	X-4946-431-1	DOOR ASSY (US, CND, E, HK, SP, MY, JE) (SILVER)	
19	X-4947-699-1	DOOR ASSY (HK) (GOLD)	

(2) CHASSIS SECTION

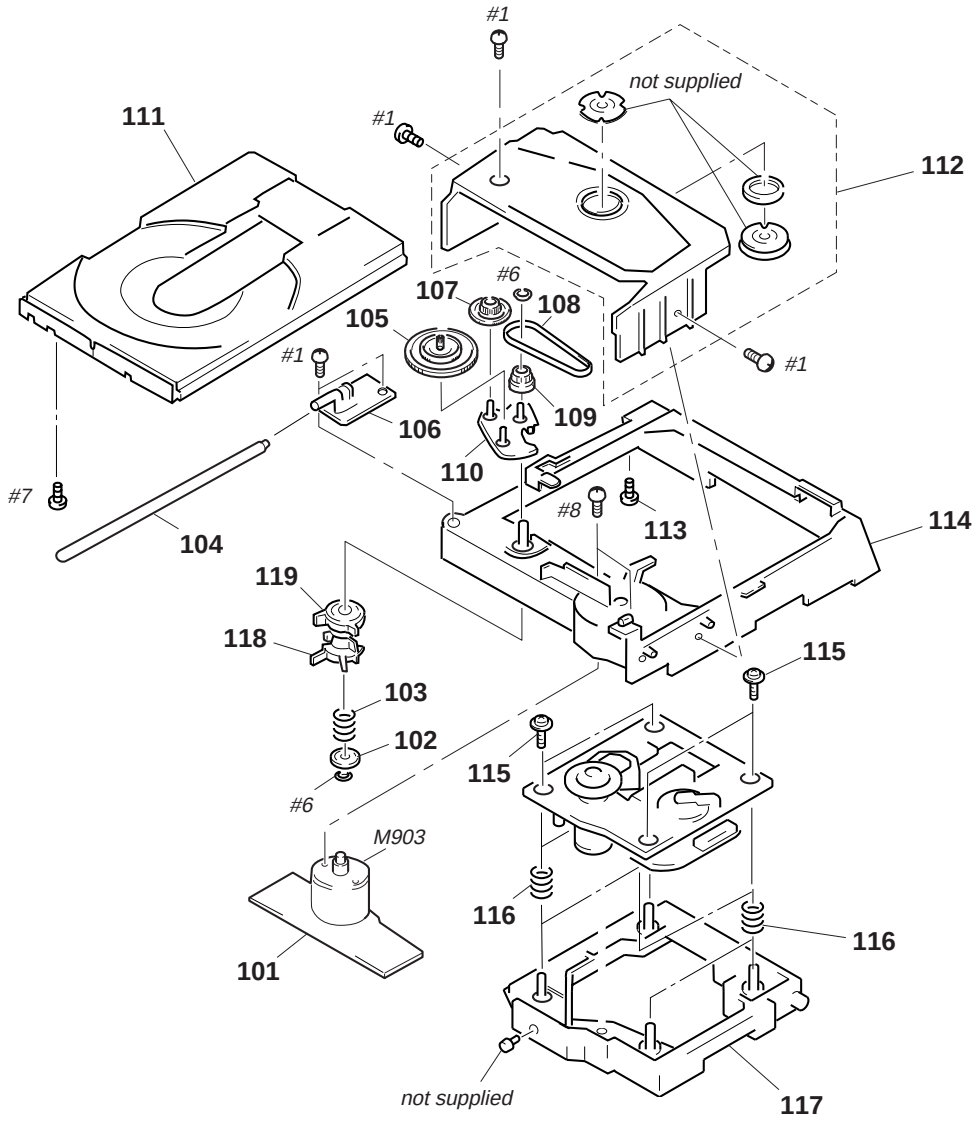


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
51	1-775-172-11	WIRE (FLAT TYPE) (19 CORE)	
* 52	4-975-356-01	PANEL, LOADING	
* 53	1-657-289-11	CONNECT BOARD (US, CND)	
* 53	1-659-290-11	CONNECT BOARD (EXCEPT US, CND)	
* 54	A-4390-992-A	MAIN BOARD, COMPLETE (T11: E, HK, SP, MY)	
* 54	A-4390-995-A	MAIN BOARD, COMPLETE (US, CND)	
* 54	A-4390-996-A	MAIN BOARD, COMPLETE (D11)	
* 54	A-4392-536-A	MAIN BOARD, COMPLETE (JE)	
55	4-975-366-01	SHEET (TRANSFORMER) (US, CND)	
55	4-979-539-01	SHEET (TRANSFORMER) (EXCEPT US, CND)	
56	3-531-576-11	RIVET	
* 57	A-4390-993-A	POWER BOARD, COMPLETE (T11: E, HK, SP, MY, JE)	
* 57	A-4390-994-A	POWER BOARD, COMPLETE (US, CND)	
* 57	A-4390-997-A	POWER BOARD, COMPLETE (D11)	
⚠58	1-569-008-11	ADAPTOR, CONVERSION 2P (SP, MY)	
⚠59	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
* 60	4-975-361-11	PANEL (AU BASS), BACK	
* 61	4-975-359-22	PANEL (MAIN), BACK (T11: E, HK, SP, MY, JE)	
* 61	4-975-359-32	PANEL (MAIN), BACK (D11)	
* 61	4-975-359-41	PANEL (MAIN), BACK (US, CND)	
* 62	4-975-362-01	COVER (BACK PANEL)	

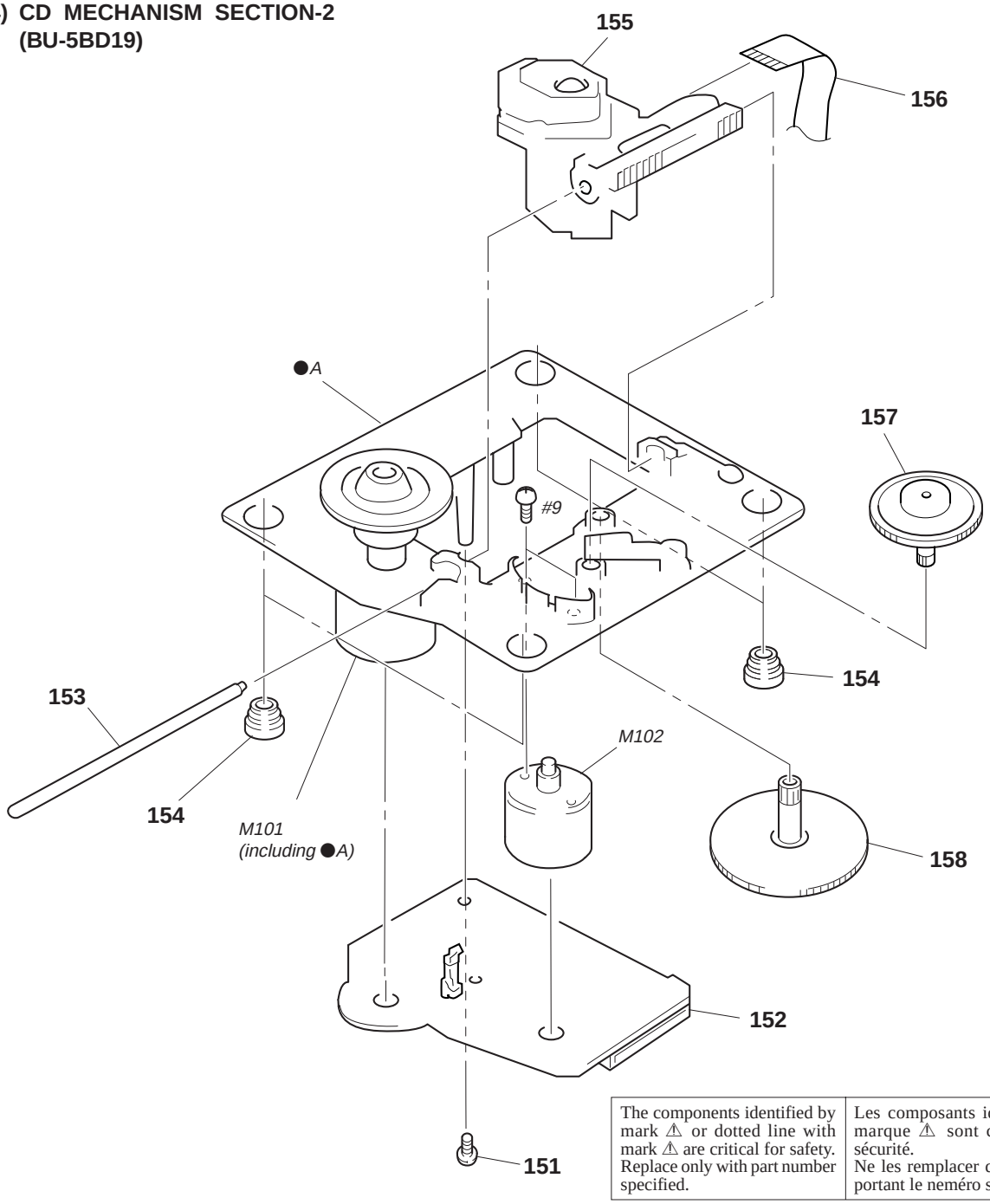
Ref. No.	Part No.	Description	Remark
* 63	3-703-244-00	BUSHING (2104), CORD (HK, SP, MY)	
* 63	3-703-571-11	BUSHING (S) (4516), CORD (US, CND, E, JE)	
* 64	1-657-288-11	AU BUS BOARD (US, CND)	
* 64	1-659-289-11	AU BUS BOARD (EXCEPT US, CND)	
* 65	1-657-287-11	A.C. BOARD (US, CND)	
* 65	1-659-292-11	A.C. BOARD (EXCEPT US, CND)	
* 66	4-975-360-11	PANEL (AC OUTLET), BACK (HK, SP, MY)	
* 66	4-975-360-21	PANEL (AC OUTLET), BACK (E, JE)	
* 66	4-975-360-61	PANEL (AC OUTLET), BACK (US, CND)	
67	4-965-822-01	FOOT	
* 68	4-977-364-01	COVER (PIN JACK 2P)	
69	4-975-903-01	PLATE (PIN JACK 6P), INDICATION	
70	1-775-378-11	CORD (WITH CONNECTOR) (SYSTEM CONTROL)(T11)	
⚠CNJ1	1-526-794-11	OUTLET, AC (HK, SP, MY)	
⚠CNJ1	1-526-882-00	OUTLET, AC (US, CND, E, JE)	
⚠CNP1	1-558-943-71	CORD, POWER (E, JE)	
⚠CNP1	1-558-945-21	CORD, POWER (POLAR. SPT-1) (US, CND)	
⚠CNP1	1-776-060-11	CORD, POWER (HK, SP, MY)	
⚠T1	1-429-096-11	TRANSFORMER, POWER (EXCEPT US, CND)	
⚠T1	1-429-549-11	TRANSFORMER, POWER (US, CND)	

(3) CD MECHANISM SECTION-1 (CDM13C-5BD19)



Ref. No.	Part No.	Description	Remark
* 101	1-634-461-11	LOADING BOARD	
102	4-927-654-01	WASHER (LIMITER)	
103	3-659-338-00	SPRING, COMPRESSION	
104	4-929-764-01	SHAFT (TABLE GUIDE)	
105	4-927-620-01	GEAR (P)	
106	4-944-006-11	BEARING	
107	4-927-628-01	GEAR (C)	
108	4-927-649-01	BELT	
109	4-929-724-01	PULLEY (B)	
110	X-4947-265-1	ARM ASSY, SWING	
111	4-944-012-01	TABLE, DISC	
112	A-4604-752-A	HOLDER (MG) ASSY	
* 113	4-917-583-21	BRACKET, YOKE	
* 114	X-4946-208-2	CHASSIS (MD) ASSY	
115	4-933-134-01	SCREW (+PTPWH M2.6X6)	
116	4-958-593-01	SPRING (BU), COMPRESSION	
117	4-929-747-01	HOLDER (BU)	
118	4-929-727-01	CAM (A)	
119	4-929-729-01	CAM (B)	
M903	A-4608-362-A	MOTOR (L) ASSY (LOADING)	

(4) CD MECHANISM SECTION-2 (BU-5BD19)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
151	4-951-620-01	SCREW (2.6X8), +BVTP	
152	A-4673-402-A	BD BOARD, COMPLETE	
153	4-917-565-01	SHAFT, SLED	
154	4-951-940-01	INSULATOR (BU)	
⚠155	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N	
156	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
157	4-917-567-01	GEAR (M)	
158	4-917-564-01	GEAR (P), FLATNESS	
M101	X-4917-523-4	BASE (OUTSART) ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

A.C. | AU BUS | BD

SECTION 7
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- Abbreviation
  CND : Canadian
  HK : Hong Kong
  JE : Tourist
  MY : Malaysia
  SP : Singapore

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-657-287-11	A.C. BOARD (US, CND)			
*	1-659-292-11	A.C. BOARD (EXCEPT US, CND)			
		**********			
	1-533-293-11	FUSE HOLDER			
*	4-875-455-31	COVER (DIA. 20), CAPACITOR			
		< CAPACITOR >			
⚠C1	1-113-916-11	CERAMIC	0.01uF	20%	250V
⚠C1	1-113-925-11	CERAMIC	0.01uF	20%	250V (US, CND)
C844	1-164-159-11	CERAMIC	0.1uF		50V
C845	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN1	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P			
CN2	1-564-321-00	PIN, CONNECTOR 2P			
CN3	1-764-344-11	PIN, CONNECTOR (PCB) (L TYPE) 7P (EXCEPT US, CND)			
* CN3	1-564-522-11	PLUG, CONNECTOR 7P (US, CND)			
		< FUSE >			
⚠F1	1-532-505-51	FUSE (T5.0AL/250V) (EXCEPT US, CND)			
		< DIODE >			
D813	8-719-987-63	DIODE 1N4148M			
		< RESISTOR >			
R899	1-202-725-00	SOLID	3.3M	10%	1/2W (US, CND)
		< RELAY >			
⚠RY1	1-755-018-11	RELAY			
		< SWITCH >			
⚠S1	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (EXCEPT US, CND)			
		< TRANSFORMER >			
⚠T1	1-429-096-11	TRANSFORMER, POWER (EXCEPT US, CND)			
⚠T1	1-429-549-11	TRANSFORMER, POWER (US,CND)			
**********					
*	1-657-288-11	AU BUS BOARD (US, CND)			
*	1-659-289-11	AU BUS BOARD (EXCEPT US, CND)			
		**********			
*	1-690-880-31	LEAD (WITH CONNECTOR)			
		< CAPACITOR >			
C201	1-136-165-00	FILM	0.1uF	5%	50V
C202	1-126-965-11	ELECT	22uF	20%	50V
		< CONNECTOR >			
* CN202	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)			
* CN205	1-564-508-11	PLUG, CONNECTOR 5P			
		< FERRITE BEAD >			
FB201	1-412-473-21	INDUCTOR 0UH			
FB202	1-412-473-21	INDUCTOR 0UH			
		< IC >			
IC201	8-749-921-12	IC GP1F32T (DIGITAL OUT)			
		< COIL >			
L201	1-410-322-11	INDUCTOR 3.3uH			
		< RESISTOR >			
R203	1-249-433-11	CARBON	22K	5%	1/4W
**********					
	A-4673-402-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V
C102	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V

BD

Ref. No.	Part No.	Description			Remark
C107	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C118	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C119	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C120	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C121	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-126-607-11	ELECT CHIP	47uF	20%	4V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C127	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C129	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C131	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C132	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C134	1-164-346-11	CERAMIC CHIP	1uF		16V
C135	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C136	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C137	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C139	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C140	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C145	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C146	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C147	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C148	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C149	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P			
CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC101	8-752-069-56	IC CXA1782BQ			
IC102	8-759-291-06	IC BA6397FP			
IC103	8-752-372-94	IC CXD2507AQ			
IC104	8-759-185-29	IC PCM1710U-B			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
Q102	8-729-424-08	TRANSISTOR UN2111			
Q103	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R102	1-216-001-00	METAL CHIP	10	5%	1/10W
R103	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R104	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R105	1-216-093-00	METAL CHIP	68K	5%	1/10W
R106	1-216-093-00	METAL CHIP	68K	5%	1/10W
R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
R108	1-216-093-00	METAL CHIP	68K	5%	1/10W
R109	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-083-00	METAL CHIP	27K	5%	1/10W
R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R118	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R119	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R120	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R122	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R126	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R127	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R128	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R129	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R138	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R139	1-216-033-00	METAL CHIP	220	5%	1/10W

BD **CONNECT** **DISPLAY**

Ref. No.	Part No.	Description			Remark
R140	1-216-081-00	METAL CHIP	22K	5%	1/10W
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R143	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R145	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R146	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R147	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R148	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R149	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R150	1-216-037-00	METAL CHIP	330	5%	1/10W
R151	1-216-037-00	METAL CHIP	330	5%	1/10W
R152	1-216-037-00	METAL CHIP	330	5%	1/10W
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R158	1-216-001-00	METAL CHIP	10	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-223-587-11	RES, ADJ, CARBON 22K			
RV102	1-223-587-11	RES, ADJ, CARBON 22K			
RV103	1-223-587-11	RES, ADJ, CARBON 22K			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)			
		< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-657-289-11	CONNECT BOARD (US, CND)			
*	1-659-290-11	CONNECT BOARD (EXCEPT US, CND)			
		**********			
		< CONNECTOR >			
CN507	1-750-189-11	CONNECTOR, BOARD TO BOARD 16P			
CN508	1-695-094-11	SOCKET, CONNECTOR 11P			
CN509	1-750-179-11	SOCKET, CONNECTOR 5P			
**********					
*	A-4378-477-A	DISPLAY BOARD, COMPLETE (E)			
*	A-4378-886-A	DISPLAY BOARD, COMPLETE (D11)			
*	A-4378-911-A	DISPLAY BOARD, COMPLETE (T11:SP, MY, HK)			
*	A-4390-139-A	DISPLAY BOARD, COMPLETE (US, CND)			
*	A-4392-535-A	DISPLAY BOARD, COMPLETE (JE)			
		**********			
	1-690-880-51	LEAD (WITH CONNECTOR)			
*	4-932-810-11	CUSHION (FL)			
*	4-975-363-01	HOLDER (FL TUBE)			

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C701	1-126-916-11	ELECT	1000uF	20%	6.3V
C702	1-162-306-11	CERAMIC	0.01uF	30%	16V
C703	1-164-159-11	CERAMIC	0.1uF		50V
C704	1-164-159-11	CERAMIC	0.1uF		50V
C705	1-161-494-00	CERAMIC	0.022uF		25V
C706	1-124-907-11	ELECT	10uF	20%	50V
C707	1-102-953-00	CERAMIC	18PF	5%	50V
C708	1-102-514-11	CERAMIC	22PF	5%	50V
C709	1-124-903-11	ELECT	1uF	20%	50V
C710	1-124-903-11	ELECT	1uF	20%	50V
C714	1-164-159-11	CERAMIC	0.1uF		50V
C715	1-164-159-11	CERAMIC	0.1uF		50V
C750	1-162-290-31	CERAMIC	470PF	10%	50V
		< CONNECTOR >			
* CN701	1-568-834-11	SOCKET, CONNECTOR 15P			
* CN702	1-568-954-11	PIN, CONNECTOR 5P			
* CN703	1-568-832-11	SOCKET, CONNECTOR 13P			
* CN704	1-568-826-11	SOCKET, CONNECTOR 7P			
		< CONPOSITION CIRCUIT BLOCK >			
CP701	1-233-699-11	COMPOSITION CIRCUIT BLOCK 100K X 6			
CP702	1-233-568-11	COMPOSITION CIRCUIT BLOCK 100K X 11			
		< DIODE >			
D701	8-719-200-82	DIODE 11ES2			
D702	8-719-987-63	DIODE 1N4148M			
D703	8-719-987-63	DIODE 1N4148M			
D704	8-719-987-63	DIODE 1N4148M			
D705	8-719-052-21	LED SEL58420C-TH8C (▶II)			
D706	8-719-987-63	DIODE 1N4148M			
		< FLUORESCENT INDICATOR TUBE>			
FL701	1-517-441-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	8-759-436-62	IC uPD78044AGF-204-3B9			
		< COIL >			
L701	1-410-521-11	INDUCTOR 100uH			
		< TRANSISTOR >			
Q701	8-729-422-73	TRANSISTOR UN4212			
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF			

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R701	1-249-413-11	CARBON	470	5%	1/4W	
R702	1-249-413-11	CARBON	470	5%	1/4W	
R703	1-249-417-11	CARBON	1K	5%	1/4W	
R704	1-249-417-11	CARBON	1K	5%	1/4W	
R705	1-249-417-11	CARBON	1K	5%	1/4W	
R706	1-249-417-11	CARBON	1K	5%	1/4W	
R707	1-249-417-11	CARBON	1K	5%	1/4W	
R708	1-249-417-11	CARBON	1K	5%	1/4W	
R709	1-249-437-11	CARBON	47K	5%	1/4W	(T11)
R710	1-249-437-11	CARBON	47K	5%	1/4W	(D11)
R711	1-249-417-11	CARBON	1K	5%	1/4W	
R712	1-249-417-11	CARBON	1K	5%	1/4W	
R713	1-249-417-11	CARBON	1K	5%	1/4W	
R714	1-249-409-11	CARBON	220	5%	1/4W	
R715	1-249-437-11	CARBON	47K	5%	1/4W	
R716	1-249-433-11	CARBON	22K	5%	1/4W	
R717	1-249-413-11	CARBON	470	5%	1/4W	
R718	1-247-843-11	CARBON	3.3K	5%	1/4W	
R719	1-249-425-11	CARBON	4.7K	5%	1/4W	(SP, MY, HK)
R719	1-249-421-11	CARBON	2.2K	5%	1/4W	(E, JE)
R720	1-249-431-11	CARBON	15K	5%	1/4W	(SP, MY, E, HK)
R720	1-247-844-11	CARBON	3.6K	5%	1/4W	(JE)
R720	1-249-429-11	CNDRBON	10K	5%	1/4W	(US, CND)
R721	1-247-843-11	CARBON	3.3K	5%	1/4W	
R722	1-249-413-11	CARBON	470	5%	1/4W	
R723	1-249-415-11	CARBON	680	5%	1/4W	
R724	1-249-417-11	CARBON	1K	5%	1/4W	
R725	1-249-419-11	CARBON	1.5K	5%	1/4W	
R726	1-249-421-11	CARBON	2.2K	5%	1/4W	
R727	1-249-409-11	CARBON	220	5%	1/4W	
R728	1-249-417-11	CARBON	1K	5%	1/4W	
R729	1-249-417-11	CARBON	1K	5%	1/4W	
R730	1-249-417-11	CARBON	1K	5%	1/4W	
R731	1-249-409-11	CARBON	220	5%	1/4W	
R732	1-249-429-11	CARBON	10K	5%	1/4W	
R733	1-249-409-11	CARBON	220	5%	1/4W	
R734	1-249-417-11	CARBON	1K	5%	1/4W	
R735	1-249-417-11	CARBON	1K	5%	1/4W	
R736	1-249-417-11	CARBON	1K	5%	1/4W	
R737	1-249-409-11	CARBON	220	5%	1/4W	
R738	1-249-425-11	CARBON	4.7K	5%	1/4W	
R739	1-249-417-11	CARBON	1K	5%	1/4W	
R740	1-249-417-11	CARBON	1K	5%	1/4W	
R741	1-249-409-11	CARBON	220	5%	1/4W	
R742	1-249-437-11	CARBON	47K	5%	1/4W	
R743	1-247-807-31	CARBON	100	5%	1/4W	
R744	1-249-401-11	CARBON	47	5%	1/4W	
R749	1-249-421-11	CARBON	2.2K	5%	1/4W	
R750	1-247-891-00	CARBON	330K	5%	1/4W	
R751	1-249-429-11	CARBON	10K	5%	1/4W	
		< SWITCH >				
S701	1-554-303-21	SWITCH, TACTILE (BAND)				
S702	1-554-303-21	SWITCH, TACTILE (▶▶▶▶I TUNING +)				
S703	1-554-303-21	SWITCH, TACTILE (⏏)				
S704	1-554-303-21	SWITCH, TACTILE (I◀◀ ◀◀ TUNING -)				
S705	1-554-303-21	SWITCH, TACTILE (■)				
S706	1-554-303-21	SWITCH, TACTILE (▶II)				
		< VIBRATOR >				
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)				
X702	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)				
**********						
*	1-634-461-11	LOADING BOARD				
		**********				
		< CONNECTOR >				
* CN291	1-564-498-11	PIN, CONNECTOR 5P				
		< SWITCH >				
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)				
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)				
**********						
*	A-4390-992-A	MAIN BOARD, COMPLETE (T11: SP, MY, E, HK)				
*	A-4390-995-A	MAIN BOARD, COMPLETE (US,CND)				
*	A-4390-996-A	MAIN BOARD, COMPLETE (D11)				
*	A-4392-536-A	MAIN BOARD, COMPLETE (JE)				
		**********				
		< CAPACITOR >				
C102	1-126-965-11	ELECT	22uF	20%	50V	
C104	1-124-257-00	ELECT	2.2uF	20%	50V	
C108	1-162-303-11	CERAMIC	0.0033uF	20%	16V	
C109	1-126-965-11	ELECT	22uF	20%	50V	
C110	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C111	1-124-120-11	ELECT	220uF	20%	25V	
C112	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C113	1-124-907-11	ELECT	10uF	20%	50V	
C114	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C152	1-126-965-11	ELECT	22uF	20%	50V	

MAIN

Ref. No.	Part No.	Description				Remark
C154	1-124-257-00	ELECT	2.2uF	20%	50V	
C158	1-162-303-11	CERAMIC	0.0033uF	20%	16V	
C159	1-126-965-11	ELECT	22uF	20%	50V	
C302	1-124-907-11	ELECT	10uF	20%	50V	
C303	1-124-465-00	ELECT	0.47uF	20%	50V	
C304	1-124-234-00	ELECT	22uF	20%	16V	
C305	1-137-370-11	FILM	0.01uF	5%	50V	
						(EXCEPT US, CND)
C305	1-164-159-11	CERAMIC	0.1uF		50V	
						(US, CND)
C306	1-126-965-11	ELECT	22uF	20%	50V	
C307	1-126-965-11	ELECT	22uF	20%	50V	
C308	1-128-197-11	ELECT	10uF	20%	50V	
C309	1-136-171-00	FILM	0.33uF	5%	50V	
C310	1-137-374-11	FILM	0.047uF	5%	50V	
C311	1-124-234-00	ELECT	22uF	20%	16V	
C312	1-126-965-11	ELECT	22uF	20%	50V	
						(EXCEPT US, CND)
C312	1-102-114-00	CERAMIC	470PF	10%	50V	
						(US, CND)
C313	1-124-465-00	ELECT	0.47uF	20%	50V	
C314	1-162-207-31	CERAMIC	22PF	5%	50V	
C350	1-162-290-31	CERAMIC	470PF	10%	50V	
C352	1-124-907-11	ELECT	10uF	20%	50V	
C353	1-124-465-00	ELECT	0.47uF	20%	50V	
C354	1-124-234-00	ELECT	22uF	20%	16V	
C355	1-137-370-11	FILM	0.01uF	5%	50V	
						(EXCEPT US, CND)
C355	1-164-159-11	CERAMIC	0.1uF		50V	
						(US, CND)
C356	1-126-965-11	ELECT	22uF	20%	50V	
C357	1-126-965-11	ELECT	22uF	20%	50V	
C358	1-128-197-11	ELECT	10uF	20%	50V	
C359	1-136-171-00	FILM	0.33uF	5%	50V	
C360	1-137-374-11	FILM	0.047uF	5%	50V	
C361	1-124-234-00	ELECT	22uF	20%	16V	
C362	1-126-965-11	ELECT	22uF	20%	50V	
						(EXCEPT US, CND)
C362	1-102-114-00	CERAMIC	470PF	10%	50V	
						(US, CND)
C363	1-124-465-00	ELECT	0.47uF	20%	50V	
C364	1-162-207-31	CERAMIC	22PF	5%	50V	
C401	1-128-197-11	ELECT	10uF	20%	50V	
C402	1-126-963-11	ELECT	4.7uF	20%	50V	
C404	1-126-049-11	ELECT	22uF	20%	50V	
C405	1-124-907-11	ELECT	10uF	20%	50V	
C406	1-126-963-11	ELECT	4.7uF	20%	50V	
C451	1-128-197-11	ELECT	10uF	20%	50V	
C452	1-126-963-11	ELECT	4.7uF	20%	50V	
C454	1-126-049-11	ELECT	22uF	20%	50V	
C455	1-124-907-11	ELECT	10uF	20%	50V	
C456	1-126-963-11	ELECT	4.7uF	20%	50V	
C501	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C549	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C550	1-162-294-31	CERAMIC	0.001uF	10%	50V	
		< CONNECTOR >				
* CN101	1-568-934-11	PIN, CONNECTOR 7P (T11)				
CN102	1-506-468-11	PIN, CONNECTOR 3P				
* CN401	1-568-942-11	PIN, CONNECTOR 4P				
* CN501	1-568-856-11	SOCKET, CONNECTOR 13P				
CN502	1-750-198-11	CONNECTOR, BOARD TO BOARD 16P				
		< DIODE >				
D101	8-719-987-63	DIODE 1N4148M				
D301	8-719-987-63	DIODE 1N4148M				
D302	8-719-987-63	DIODE 1N4148M				
D303	8-719-987-63	DIODE 1N4148M				
D304	8-719-987-63	DIODE 1N4148M				
D305	8-719-933-33	DIODE HZS6A1L				
D306	8-719-933-33	DIODE HZS6A1L				
		< FERRITE BEAD >				
FB91	1-412-473-21	INDUCTOR 0UH (US, CND)				
FB95	1-412-473-21	INDUCTOR 0UH (US, CND)				
		< IC >				
IC101	8-759-009-06	IC MC14052BF				
IC102	8-759-008-67	IC MC14066BF				
IC301	8-759-009-06	IC MC14052BF				
IC302	8-759-281-42	IC TC9210P				
IC303	8-759-009-06	IC MC14052BF				
IC304	8-759-634-51	IC M5218AP				
IC305	8-759-009-06	IC MC14052BF				
IC306	8-759-634-51	IC M5218AP				
IC401	8-759-710-59	IC NJM4580D-D				
IC402	8-759-710-59	IC NJM4580D-D				
IC501	8-759-267-27	IC BU2092F				
		< JACK >				
J101	1-770-890-11	JACK, PIN 6P (MD IN/OUT , OUTPUT)				
						(EXCEPT US, CND)
J101	1-770-890-11	JACK, PIN 6P (PC/MD IN/OUT ,OUTPUT)				
						(US, CND)
		< TRANSISTOR >				
Q101	8-729-141-30	TRANSISTOR 2SC3623A-LK				
Q102	8-729-422-57	TRANSISTOR UN4111				
Q103	8-729-422-57	TRANSISTOR UN4111				
Q105	8-729-900-80	TRANSISTOR DTC114ES				
Q151	8-729-141-30	TRANSISTOR 2SC3623A-LK				

Ref. No.	Part No.	Description			Remark
Q301	8-729-141-30	TRANSISTOR	2SC3623A-LK		
Q302	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q303	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q304	8-729-141-30	TRANSISTOR	2SC3623A-LK		
Q351	8-729-141-30	TRANSISTOR	2SC3623A-LK		
Q352	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q354	8-729-141-30	TRANSISTOR	2SC3623A-LK		
		< RESISTOR >			
R101	1-249-425-11	CARBON	4.7K	5%	1/4W
R102	1-249-426-11	CARBON	5.6K	5%	1/4W
R103	1-249-413-11	CARBON	470	5%	1/4W
R105	1-249-417-11	CARBON	1K	5%	1/4W
R106	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-427-11	CARBON	6.8K	5%	1/4W
R109	1-249-433-11	CARBON	22K	5%	1/4W
R110	1-249-433-11	CARBON	22K	5%	1/4W
R112	1-249-417-11	CARBON	1K	5%	1/4W
R113	1-249-433-11	CARBON	22K	5%	1/4W
R114	1-249-425-11	CARBON	4.7K	5%	1/4W
R115	1-247-895-00	CARBON	470K	5%	1/4W
R116	1-247-843-11	CARBON	3.3K	5%	1/4W (T11)
R117	1-249-417-11	CARBON	1K	5%	1/4W (T11)
R118	1-249-417-11	CARBON	1K	5%	1/4W (T11)
R119	1-249-417-11	CARBON	1K	5%	1/4W
R120	1-249-425-11	CARBON	4.7K	5%	1/4W
R121	1-249-421-11	CARBON	2.2K	5%	1/4W
R122	1-249-429-11	CARBON	10K	5%	1/4W
⚠R123	1-212-857-00	FUSIBLE	10	5%	1/4W F
⚠R124	1-212-873-11	FUSIBLE	47	5%	1/4W F
R151	1-249-425-11	CARBON	4.7K	5%	1/4W
R152	1-249-426-11	CARBON	5.6K	5%	1/4W
R153	1-249-413-11	CARBON	470	5%	1/4W
R155	1-249-417-11	CARBON	1K	5%	1/4W
R156	1-249-417-11	CARBON	1K	5%	1/4W
R158	1-249-427-11	CARBON	6.8K	5%	1/4W
R166	1-247-843-11	CARBON	3.3K	5%	1/4W (T11)
R167	1-249-417-11	CARBON	1K	5%	1/4W (T11)
R168	1-249-417-11	CARBON	1K	5%	1/4W (T11)
R169	1-249-417-11	CARBON	1K	5%	1/4W
R170	1-249-425-11	CARBON	4.7K	5%	1/4W
R301	1-249-433-11	CARBON	22K	5%	1/4W
R302	1-247-887-00	CARBON	220K	5%	1/4W
R303	1-249-425-11	CARBON	4.7K	5%	1/4W
R304	1-249-413-11	CARBON	470	5%	1/4W
R305	1-249-433-11	CARBON	22K	5%	1/4W
R306	1-249-425-11	CARBON	4.7K	5%	1/4W
R307	1-247-895-00	CARBON	470K	5%	1/4W
R308	1-249-433-11	CARBON	22K	5%	1/4W
R309	1-249-433-11	CARBON	22K	5%	1/4W
R310	1-247-807-31	CARBON	100	5%	1/4W
R311	1-247-887-00	CARBON	220K	5%	1/4W
R312	1-249-433-11	CARBON	22K	5%	1/4W
R313	1-249-433-11	CARBON	22K	5%	1/4W
R314	1-249-417-11	CARBON	1K	5%	1/4W
R315	1-249-413-11	CARBON	470	5%	1/4W
R316	1-249-432-11	CARBON	18K	5%	1/4W
R317	1-249-435-11	CARBON	33K	5%	1/4W
R319	1-247-887-00	CARBON	220K	5%	1/4W
R320	1-249-433-11	CARBON	22K	5%	1/4W
R321	1-249-433-11	CARBON	22K	5%	1/4W
R322	1-249-417-11	CARBON	1K	5%	1/4W
R323	1-249-429-11	CARBON	10K	5%	1/4W
R324	1-249-425-11	CARBON	4.7K	5%	1/4W
R325	1-249-417-11	CARBON	1K	5%	1/4W
R326	1-249-412-11	CARBON	390	5%	1/4W
R327	1-247-895-00	CARBON	470K	5%	1/4W
R328	1-249-427-11	CARBON	6.8K	5%	1/4W
R329	1-249-421-11	CARBON	2.2K	5%	1/4W
R352	1-247-887-00	CARBON	220K	5%	1/4W
R353	1-249-425-11	CARBON	4.7K	5%	1/4W
R354	1-249-413-11	CARBON	470	5%	1/4W
R361	1-247-887-00	CARBON	220K	5%	1/4W
R364	1-249-417-11	CARBON	1K	5%	1/4W
R365	1-249-413-11	CARBON	470	5%	1/4W
R369	1-247-887-00	CARBON	220K	5%	1/4W
R372	1-249-417-11	CARBON	1K	5%	1/4W
R373	1-249-429-11	CARBON	10K	5%	1/4W
R374	1-249-425-11	CARBON	4.7K	5%	1/4W
R375	1-249-417-11	CARBON	1K	5%	1/4W
R376	1-249-412-11	CARBON	390	5%	1/4W
R377	1-247-895-00	CARBON	470K	5%	1/4W
R378	1-249-427-11	CARBON	6.8K	5%	1/4W
R379	1-249-421-11	CARBON	2.2K	5%	1/4W
R401	1-249-433-11	CARBON	22K	5%	1/4W
R402	1-249-417-11	CARBON	1K	5%	1/4W
R403	1-249-425-11	CARBON	4.7K	5%	1/4W
R404	1-249-433-11	CARBON	22K	5%	1/4W
R405	1-247-887-00	CARBON	220K	5%	1/4W
R407	1-249-433-11	CARBON	22K	5%	1/4W
R408	1-249-417-11	CARBON	1K	5%	1/4W
R409	1-249-425-11	CARBON	4.7K	5%	1/4W
R410	1-249-436-11	CARBON	39K	5%	1/4W
R411	1-249-403-11	CARBON	68	5%	1/4W
R451	1-249-433-11	CARBON	22K	5%	1/4W
R452	1-249-417-11	CARBON	1K	5%	1/4W
R453	1-249-425-11	CARBON	4.7K	5%	1/4W
R454	1-249-433-11	CARBON	22K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

MAIN **PANEL** **POWER**

Ref. No.	Part No.	Description				Remark
R455	1-247-887-00	CARBON	220K	5%	1/4W	
R457	1-249-433-11	CARBON	22K	5%	1/4W	
R458	1-249-417-11	CARBON	1K	5%	1/4W	
R459	1-249-425-11	CARBON	4.7K	5%	1/4W	
R460	1-249-436-11	CARBON	39K	5%	1/4W	
R461	1-249-403-11	CARBON	68	5%	1/4W	
R501	1-247-807-31	CARBON	100	5%	1/4W	
R502	1-247-807-31	CARBON	100	5%	1/4W	
R503	1-247-807-31	CARBON	100	5%	1/4W	
		< TUNER UNIT >				
TB101	1-233-377-11	ENCAPSULATED COMPONENT (SP, MY, E, HK)				
TB101	1-233-376-11	ENCAPSULATED COMPONENT (JE)				
TB101	1-693-333-11	TUNER (FCC) (US, CND)				
		< TERMINAL >				
TM101	1-537-238-21	TERMINAL BOARD (ANTENNA)				
**********						
*	1-657-286-11	PANEL BOARD (US, CND)				
*	1-659-288-11	PANEL BOARD (EXCEPT US, CND)				
		**********				
		< CAPACITOR >				
C449	1-162-303-11	CERAMIC	0.0033uF	20%	16V	(US, CND)
C450	1-164-159-11	CERAMIC	0.1uF		50V	
C499	1-162-303-11	CERAMIC	0.0033uF	20%	16V	(US, CND)
C711	1-164-159-11	CERAMIC	0.1uF		50V	
C712	1-104-396-11	ELECT	10uF	20%	16V	
		< IC >				
IC702	8-749-922-36	IC GP1U50XB				
		< JACK >				
J401	1-764-106-11	JACK (PHONES)				
		< RESISTOR >				
R745	1-249-413-11	CARBON	470	5%	1/4W	
R746	1-247-843-11	CARBON	3.3K	5%	1/4W	
R747	1-249-415-11	CARBON	680	5%	1/4W	
R748	1-249-417-11	CARBON	1K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
		< SWITCH >				
S707	1-554-303-21	SWITCH, TACTILE (POWER)				
S708	1-554-303-21	SWITCH, TACTILE (FUNCTION)				
S709	1-554-303-21	SWITCH, TACTILE (VOL -)				
S710	1-554-303-21	SWITCH, TACTILE (VOL +)				
**********						
*	A-4390-993-A	POWER BOARD, COMPLETE				(T11:SP, MY, E, JE, HK)
*	A-4390-994-A	POWER BOARD, COMPLETE (US, CND)				
*	A-4390-997-A	POWER BOARD, COMPLETE (D11)				
		**********				
	1-537-771-21	TERMINAL BOARD, GROUND				
*	3-309-144-21	HEAT SINK				
*	4-035-555-01	HEAT SINK (EXCEPT US, CND)				
	7-685-871-01	SCREW +BVTT 3X6 (S)				
		< CAPACITOR >				
C245	1-164-159-11	CERAMIC	0.1uF		50V	(T11)
C246	1-164-159-11	CERAMIC	0.1uF		50V	(T11)
C247	1-164-159-11	CERAMIC	0.1uF		50V	(T11)
C248	1-162-282-31	CERAMIC	100PF	10%	50V	(T11)
C249	1-162-282-31	CERAMIC	100PF	10%	50V	(T11)
C298	1-162-282-31	CERAMIC	100PF	10%	50V	(T11)
C299	1-162-282-31	CERAMIC	100PF	10%	50V	(T11)
C548	1-164-159-11	CERAMIC	0.1uF		50V	
C801	1-130-491-00	MYLAR	0.047uF	5%	50V	
C802	1-130-491-00	MYLAR	0.047uF	5%	50V	
C803	1-126-029-11	ELECT	3300uF	20%	25V	(EXCEPT US, CND)
C803	1-124-523-11	ELECT	4700uF	20%	16V	(US, CND)
C804	1-126-029-11	ELECT	3300uF	20%	25V	(EXCEPT US, CND)
C804	1-124-563-11	ELECT	2200uF	20%	25V	(US, CND)
C805	1-126-024-11	ELECT	220uF	20%	16V	
C806	1-126-024-11	ELECT	220uF	20%	16V	
C807	1-126-022-11	ELECT	47uF	20%	10V	
C808	1-126-023-11	ELECT	100uF	20%	25V	
C809	1-126-023-11	ELECT	100uF	20%	25V	
C810	1-124-122-11	ELECT	100uF	20%	50V	
C811	1-124-122-11	ELECT	100uF	20%	50V	
C812	1-126-970-11	ELECT	330uF	20%	50V	
C813	1-124-913-11	ELECT	470uF	20%	50V	
C814	1-104-664-11	ELECT	47uF	20%	25V	

Ref. No.	Part No.	Description			Remark
C815	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C816	1-126-933-11	ELECT	100uF	20% 16V	
C817	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C818	1-124-572-11	ELECT	100uF	20% 63V	
C819	1-124-910-11	ELECT	47uF	20% 50V	
C820	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C821	1-124-910-11	ELECT	47uF	20% 50V	
C822	1-126-942-61	ELECT	1000uF	20% 25V	
					(EXCEPT US, CND)
C822	1-124-907-11	ELECT	10uF	20% 50V	
					(US, CND)
C823	1-124-463-00	ELECT	0.1uF	20% 50V	
C824	1-136-165-00	FILM	0.1uF	5% 50V	
C825	1-126-916-11	ELECT	1000uF	20% 6.3V	
					(EXCEPT US, CND)
C825	1-104-666-11	ELECT	220uF	20% 6.3V	
					(US, CND)
C826	1-136-165-00	FILM	0.1uF	5% 50V	
C827	1-126-942-61	ELECT	1000uF	20% 25V	
					(EXCEPT US, CND)
C827	1-124-907-11	ELECT	10uF	20% 50V	
					(US, CND)
C828	1-104-664-11	ELECT	47uF	20% 16V	
C829	1-126-103-11	ELECT	470uF	20% 16V	
C830	1-126-024-11	ELECT	220uF	20% 25V	
					(EXCEPT US, CND)
C830	1-126-059-11	ELECT	10uF	20% 50V	
					(US, CND)
C831	1-126-163-11	ELECT	4.7uF	20% 50V	
C832	1-110-495-11	ELECT	220uF	20% 25V	
C833	1-161-494-00	CERAMIC	0.022uF	25V	
C834	1-162-306-11	CERAMIC	0.01uF	30% 16V	
C835	1-136-161-00	FILM	0.047uF	5% 50V (T11)	
C836	1-136-161-00	FILM	0.047uF	5% 50V (T11)	
C837	1-164-159-11	CERAMIC	0.1uF	50V	
C839	1-126-925-11	ELECT	470uF	20% 10V	
					(EXCEPT US, CND)
C839	1-124-443-00	ELECT (US, CND)	100uF	20% 10V	
C841	1-164-159-11	CERAMIC	0.1uF	50V	
C842	1-164-159-11	CERAMIC	0.1uF	50V	
C846	1-164-159-11	CERAMIC	0.1uF	50V	
C847	1-164-159-11	CERAMIC	0.1uF	50V	
					(EXCEPT US, CND)
C847	1-162-600-11	CERAMIC	0.0047uF	30% 16V	
					(US, CND)
C849	1-164-159-11	CERAMIC	0.1uF	50V	
					(EXCEPT US, CND)
C849	1-162-600-11	CERAMIC	0.0047uF	30% 16V	
					(US, CND)
C850	1-164-159-11	CERAMIC	0.1uF	50V	
					(EXCEPT US, CND)
C851	1-164-159-11	CERAMIC	0.1uF	50V	
C894	1-162-600-11	CERAMIC	0.0047uF	30% 16V	
					(US, CND)
C895	1-102-106-00	CERAMIC	100PF	10% 50V	
					(US, CND)
		< CONNECTOR >			
CN201	1-774-280-11	PIN, CONNECTOR 13P			
					(SYSTEM CONTROL)(T11)
* CN203	1-568-934-11	PIN, CONNECTOR 7P (T11)			
CN204	1-506-468-11	PIN, CONNECTOR 3P			
CN206	1-764-328-11	PIN, CONNECTOR (PCB) (V TYPE) 5P			
					(EXCEPT US, CND)
* CN206	1-564-508-11	PLUG, CONNECTOR 5P (US, CND)			
CN503	1-695-089-11	PIN, CONNECTOR (PC BOARD) 11P			
* CN504	1-568-826-11	SOCKET, CONNECTOR 7P			
CN505	1-569-932-11	SOCKET, CONNECTOR 15P			
CN506	1-750-180-11	PIN, CONNECTOR (PC BOARD) 5P			
CN801	1-764-330-11	PIN, CONNECTOR (PCB) (V TYPE) 7P			
					(EXCEPT US, CND)
CN801	1-564-510-11	PLUG, CONNECTOR 7P (US, CND)			
CN803	1-770-167-11	CONNECTOR, FFC/FPC 19P			
		<CONPOSITION CIRCUIT BLOCK>			
CP801	1-233-655-11	CIRCUIT BLOCK, COMPOSITION 100Px2			
					(US, CND)
		< DIODE >			
D501	8-719-000-60	DIODE UZL-6M2			
D801	8-719-200-02	DIODE 10E2			
D802	8-719-200-02	DIODE 10E2			
D803	8-719-200-02	DIODE 10E2			
D804	8-719-200-02	DIODE 10E2			
D805	8-719-933-33	DIODE HZS6A1L			
D806	8-719-200-82	DIODE 11ES2			
D807	8-719-200-82	DIODE 11ES2			
D808	8-719-200-82	DIODE 11ES2			
D809	8-719-200-82	DIODE 11ES2			
D810	8-719-200-82	DIODE 11ES2			
D811	8-719-200-82	DIODE 11ES2			
D812	8-719-001-79	DIODE UZL-12H1-TP			
D814	8-719-200-82	DIODE 11ES2			
D815	8-719-200-82	DIODE 11ES2			
D816	8-719-200-82	DIODE 11ES2			
D817	8-719-934-13	DIODE HZS24-1L			
D818	8-719-933-33	DIODE HZS6A1L			
D819	8-719-933-57	DIODE HZS9B2L			
D820	8-719-000-75	DIODE UZL-7L1			
D821	8-719-010-33	DIODE UZ-4.7BSB			
D822	8-719-200-82	DIODE 11ES2			

POWER

Ref. No.	Part No.	Description	Remark
D823	8-719-987-63	DIODE 1N4148M	
D824	8-719-200-82	DIODE 11ES2 (EXCEPT US, CND)	
D825	8-719-200-82	DIODE 11ES2 (EXCEPT US, CND)	
D826	8-719-200-82	DIODE 11ES2	
D827	8-719-200-82	DIODE 11ES2	
D828	8-719-200-82	DIODE 11ES2	
D829	8-719-000-60	DIODE UZL-6M2	
D830	8-719-000-60	DIODE UZL-6M2	
D831	8-719-000-60	DIODE UZL-6M2	
		< FUSE >	
⚠F801	1-532-464-51	FUSE (T2.5AL/250V) (EXCEPT US, CND)	
⚠F802	1-532-464-51	FUSE (T2.5AL/250V) (EXCEPT US, CND)	
⚠F801	1-576-105-11	FUSE (2.5A/250V) (US,CND)	
⚠F802	1-576-105-11	FUSE (2.5A/250V) (US,CND)	
		< FERRITE BEAD >	
FB9	1-412-473-21	INDUCTOR 0UH (US, CND)	
FB14	1-412-473-21	INDUCTOR 0UH (US, CND)	
FB24	1-410-397-21	FERRITE BEAD INDUCTOR (US, CND)	
		< IC >	
IC801	8-759-820-13	IC L78MR06	
IC802	8-759-822-09	IC LB1641	
		< IC LINK/FUSE >	
⚠PS801	1-532-841-21	LINK, IC (1.6A 90VAC 60VPC)	(EXCEPT US, CND)
⚠PS801	1-532-778-21	FUSE, MICRO (1.6A/125V) (US, CND)	
⚠PS802	1-532-841-21	LINK, IC (1.6A 90VAC 60VPC)	(EXCEPT US, CND)
⚠PS802	1-532-778-21	FUSE, MICRO (1.6A/125V) (US, CND)	
		< TRANSISTOR >	
Q502	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q800	8-729-224-61	TRANSISTOR 2SK246-Y	
Q801	8-729-140-96	TRANSISTOR 2SD774-34	
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q803	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q804	8-729-140-97	TRANSISTOR 2SB734-34	
Q805	8-729-900-80	TRANSISTOR DTC114ES	
Q806	8-729-209-15	TRANSISTOR 2SD2012	
Q807	8-729-900-80	TRANSISTOR DTC114ES	
Q808	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q809	8-729-209-15	TRANSISTOR 2SD2012	
Q810	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q812	8-729-209-15	TRANSISTOR 2SD2012	
Q813	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q814	8-729-900-80	TRANSISTOR DTC114ES	
Q815	8-729-801-93	TRANSISTOR 2SD1387	
Q816	8-729-801-84	TRANSISTOR 2SB1013-4	
Q817	8-729-900-80	TRANSISTOR DTC114ES	
Q818	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R504	1-249-425-11	CARBON 4.7K 5% 1/4W	
R505	1-249-417-11	CARBON 1K 5% 1/4W	
R506	1-249-429-11	CARBON 10K 5% 1/4W	
R507	1-249-393-11	CARBON 10 5% 1/4W	
R508	1-249-415-11	CARBON 680 5% 1/4W	
R801	1-247-843-11	CARBON 3.3K 5% 1/4W	
R802	1-249-415-11	CARBON 680 5% 1/4W	
R803	1-249-419-11	CARBON 1.5K 5% 1/4W	
R804	1-249-418-11	CARBON 1.2K 5% 1/4W	
R805	1-249-425-11	CARBON 4.7K 5% 1/4W	
R806	1-249-415-11	CARBON 680 5% 1/4W	
R807	1-247-843-11	CARBON 3.3K 5% 1/4W	
R808	1-249-430-11	CARBON 12K 5% 1/4W	
R809	1-249-429-11	CARBON 10K 5% 1/4W	
R810	1-249-409-11	CARBON 220 5% 1/4W	
R811	1-249-420-11	CARBON 1.8K 5% 1/4W	
R812	1-249-429-11	CARBON 10K 5% 1/4W	
R813	1-249-409-11	CARBON 220 5% 1/4W	
R814	1-249-437-11	CARBON 47K 5% 1/4W	
R816	1-249-425-11	CARBON 4.7K 5% 1/4W	
R817	1-249-421-11	CARBON 2.2K 5% 1/4W	
R818	1-249-417-11	CARBON 1K 5% 1/4W	
R819	1-249-425-11	CARBON 4.7K 5% 1/4W	
R820	1-249-409-11	CARBON 220 5% 1/4W	
R821	1-249-425-11	CARBON 4.7K 5% 1/4W	
R822	1-249-421-11	CARBON 2.2K 5% 1/4W	
R823	1-249-421-11	CARBON 2.2K 5% 1/4W	
R824	1-249-409-11	CARBON 220 5% 1/4W	
R825	1-247-807-31	CARBON 100 5% 1/4W	
R826	1-247-807-31	CARBON 100 5% 1/4W	
⚠R827	1-212-865-00	FUSIBLE 22 5% 1/4W F	
R829	1-249-415-11	CARBON 680 5% 1/4W	
R830	1-249-425-11	CARBON 4.7K 5% 1/4W	
⚠R832	1-212-873-11	FUSIBLE 47 5% 1/4W F	
R861	1-249-389-11	CARBON 4.7 5% 1/4W	(US, CND)
⚠R891	1-219-155-11	FUSIBLE 0.27 10% 1/4W	(US, CND)
⚠R892	1-219-155-11	FUSIBLE 0.27 10% 1/4W	(US, CND)

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MISCELLANEOUS
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7	1-775-731-11	WIRE (FLAT TYPE) (7 CORE)
9	1-775-732-11	WIRE (FLAT TYPE) (13 CORE)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
12	1-775-733-11	WIRE (FLAT TYPE) (15 CORE)	
51	1-775-172-11	WIRE (FLAT TYPE) (19 CORE)	
⚠58	1-569-008-11	ADAPTOR, CONVERSION 2P (SP, MY)	
⚠59	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
70	1-775-378-11	CORD (WITH CONNECTOR) (SYSTEM CONTROL)(T11)	
⚠155	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N	
156	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
⚠CNJ1	1-526-794-11	OUTLET, AC (HK, SP, MY)	
⚠CNJ1	1-526-882-00	OUTLET, AC (US, CND, E, JE)	
⚠CNP1	1-558-943-71	CORD, POWER (E, JE)	
⚠CNP1	1-558-945-21	CORD, POWER (POLAR. SPT-1) (US, CND)	
⚠CNP1	1-776-060-11	CORD, POWER (HK, SP, MY)	
M101	X-4917-523-4	BASE (OUTSART) ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M903	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
⚠T1	1-429-096-11	TRANSFORMER, POWER (EXCEPT US, CND)	
⚠T1	1-429-549-11	TRANSFORMER, POWER (US, CND)	

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HARDWARE LIST
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#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-682-547-09	SCREW (M3X6), S TITE, +BTT	
#3	7-685-870-01	SCREW +BVTT 3X5 (S)	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#6	7-624-105-04	STOP RING 2.3, TYPE-E	
#7	7-685-234-19	SCREW +KTP 2.6X8 TYPE2 NON-SLIT	
#8	7-621-775-10	SCREW +B 2.6X4	
#9	7-621-255-15	SCREW +P 2X3	

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ACCESSORIES & PACKING MATERIALS
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	4-975-903-01	PLATE(PIN JACK 6P),INDICATION	
*	4-977-364-01	COVER (PIN JACK 2P)	

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